OCTOBER, 1961
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★★★

BETTER FARMING METHODS

Business Magazine for the Adoption Leaders of Agriculture

Do They Really Dislike Us?
Page 24

Page 8 ♦♦♦ **HOW TO USE CREDIT WISELY**

Page 20 ♦♦♦ **DO YOU HAVE TO SPECIALIZE?**

Page 22 ♦♦♦ **HOW CAN WE MOVE PEOPLE OUT OF AGRICULTURE?**

UNIVERSITY MICROFILMS
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ANN ARBOR MICH

Farmer Jake Zimmerman, Dover, Delaware

Farmers you look to as leaders look to Firestone for farm tires

The soil that Jake Zimmerman farms around Dover may well have inspired Thomas Jefferson when he called Delaware the "Jewel among the States." This rich soil and ideal climate have made the area an important agricultural center on the eastern seaboard. Modern techniques have helped Jake Zimmerman become one of its leading vegetable producers. Mr. Zimmerman favors Firestone tires for his six tractors and three trucks. He uses them on his cars, too. Why? He puts it this way: "I roll up a lot of miles on my machinery every year, so I need tires that wear long. And when I'm in fields, I need traction I can depend on in both tractors and trucks. That's why I always buy Firestone tires!"

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This special, new-product message is being addressed currently to sheep raisers.

IN THIS ISSUE

PAGE 8— How to Use Credit Wisely ..... The questions that a banker asks and the answers a farmer gives are important for the wise use of credit. This is an interview with an agricultural banker.

PAGE 17— Who Will Do Your Bargaining? .... Here is one of the hottest subjects in agriculture today. There are many who would like to bargain for the farmer. They include labor unions, industry, federal government and the farmer cooperatives.

PAGE 20— Do You Have to Specialize? ..... If you're going to be a part of commercial agriculture you must specialize. The continuous flow of new technology and the investment necessary for equipment make specialization necessary.

PAGE 22— How Can We Move People Out of Agriculture? ..... It's not an easy task but one that must be carried out if average farm income is to go up. The author makes two suggestions: One of these is education and the other is government programs to retrain individuals.

PAGE 24— Do They Really Dislike Us? ..... Is it true that urban opinion is running against farmers? It is difficult to say, but we do know that agriculture needs a good, well-organized public relations program.

BETTER FARMING METHODS

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KEEPING AHEAD

Tractor With Gas Turbine Engine

In its newest research tractor, the HT-340 International Harvester has paired gas turbine engine with hydrostatic transmission. IH believes this may be the first time combination has been tried in farm and utility tractor. Tractor design trend toward increased power and more precise power control may make natural running mates of gas turbine and hydrostatic transmission in future. Turbine engine permitted radically new visual concept. Skin sections are molded fiberglass.

Lambs Cultivate Cornfields

Ever tried letting lambs keep the weeds down in cornfields when you can no longer cultivate? The University of Illinois did and found that lambs were effective four-legged cultivators and gained $10 worth of weight to boot. Sheep Researcher E. E. Hatfield and his colleagues carried out the preharvest gleaning study for six years. The lambs gained an average of 54 pounds each. Valued at 20 cents a pound, this average preharvest gain was worth more than $10. In general, gleaning did not lower grain yields. Several fields yielded more than 100 bushels of 15 percent moisture corn during the six years. During dry seasons, preharvest gleaning can actually increase yields, as lambs eat grass and weeds that compete for moisture. Preharvest gleaning can, however, reduce yields, especially if fields are overstocked. Hatfield recommends stocking cornfields with two to four lambs per acre. Fewer lambs will increase the gain per lamb but decrease the gain per acre.

Cancer in Animals

Cancer in animals is similar to cancer in human beings, according to Dr. A. M. Watrach, University of Illinois veterinarian. Malignant tumors, or neoplasms, found in man and animal have a similar structure and behavior — they infiltrate surrounding normal tissue, destroy it and spread to other organs by blood or lymphatic vessels. Fortunately, these tumors are seldom transmitted from animal to animal or animal to man. The clinical signs are the same, Dr. Watrach said. There may be an ulcer that refuses to heal, an abnormal and chronic enlargement, a loss of weight. If one of these signs appears, the animal should be examined by a veterinarian at once.

Carcass Grading Makes Sense

Beef carcass grading makes sense, according to University of Wisconsin research. Carcasses grading high yield more dollars worth of meat than lower grading carcasses do. Researchers Richard Carl and R. W. Bray have analyzed carcass value information previously collected in a study of more than 1,000 steer carcasses. The cut-out tests showed that carcasses which graders said were "Prime" were worth about $1.85 per hundred more than carcasses graded at "Choice" and $3.50 more per hundred pounds than carcasses graded at "Good". The "Choice" carcasses were worth around $1.65 per hundred more than "Good" carcasses.

Research Boosts Feeding Value of Grains

Methods of triggering a 15 to 30 percent boost in the feed value of enzyme-treated cereals were recently described to the nation's scientists.

H. E. Willingham, Pullman, Washington, told the American Poultry Science Association that cooking and/or acid treatment sharply increased weight gains of poultry fed enzyme-treated corn, and some wheat varieties and milling by-products. Earlier, Washington State researchers demonstated that the feed value of barley could be stepped up about 20 percent by addition of enzymes or by simple water fermentation.

Use of Hay Conditioners

Illinois dairy herd improvement cooperators are using hay conditioners at a record rate. University of Illinois Dairy Scientist Gary Harpestad says a recent study of 1,547 member records showed that 55 percent of the dairymen were using hay conditioners. This compares with 33 percent last year and 20 percent in 1959.

University of Illinois studies show that hay crushers will cut hay-drying time in half, reducing the chances of rain damage. Harpestad says fast curing isn't the only advantage of crushing. It can save up to 10 percent more hay by preventing loss of leaves caused by extra drying and handling after rains.

All Roots Must Have Water

A plant uses water most efficiently when the total depth of its root zone contains an adequate amount of water, according to tests made recently by two Cornell University researchers. Using 12 tomato plants under greenhouse conditions, Leslie Farkas, experimentalist in vegetable crops, and Arthur J. Pratt, professor of vegetable crops at the New York State College of Agriculture, found the plants are able to

IN AGRICULTURE

survive dryness in any part of their root zone if there is water elsewhere in the root zone, but that a water deficiency in any part of the root system reduces the total plant yield and the efficiency of water use. The plants produced an optimum yield only when there was enough moisture in all parts of the root system.

Soybean Hull Feeding Test

Can soybean hulls — a by-product of the process by which high-protein soybean meal is made — be used efficiently as a feed? Probably so, says Neil Bradley, University of Kentucky Experiment Station beef researcher. He tried it last year, feeding the hulls in several forms, and had favorable results.

Some of the hulls were pelleted. The 12 steers on these averaged 1.5 pounds daily gain. This was "significantly" higher than daily gains of steers which got ground hulls — 1.12 pounds. It also was better than results for steers on flaked hulls which was 1.2 pounds a day gain. The big advantage, Bradley said, was in the amount of feed needed per steer to put on 100 pounds of gain. It took 916 pounds for the "flaked" lot and 966 pounds for the "ground" lot — but only 722 pounds for the pelleted group. Bradley surmises that the pelleting helped the steers utilize the feed more efficiently. He thinks some unknown chemical change in the pelleted feed may have made the soybean hulls more efficient.

Private Air Baths Keep Sows Comfortable

Making sows more comfortable in the farrowing house is paying off this summer at Iowa State University's swine nutrition farm. They're receiving a special air bath over their head and back — at a price their producers are happy to pay.

By placing the air where it will do the most good, agricultural engineers are ventilating with one-fourth to one-third less total air-moving capacity than required with the popular exhaust fan. Nurtured by agricultural engineers in cooperation with swine nutritionists at Iowa State University, "zone" ventilation also eliminates stagnant air pockets and blind spots. It reduces odor and moisture problems. And you don't have to worry about over- or under-ventilating any part of the building. This spoon-fed comfort is also designed to eliminate heat stress, according to Agricultural Engineers Thamon Hazen and Duane Mangold.

High-Temperature Corn Drying

University of Illinois agricultural engineers are working to develop a dryer that will attach to corn harvesting equipment in the field and dry the grain at the same rate it is harvested. In the experimental quick-dryer, a burner assembly blasts air, heated 500 to 700 degrees, over high-moisture corn as it tumbles through a 10-foot rotary drum dryer dropping the moisture content from 30 to 15 percent in about two minutes.

Two main purposes of the tests to date have been to find out how high temperatures affect drying rates and to study the effects of cracking the corn as a possible means of speeding up drying rates.

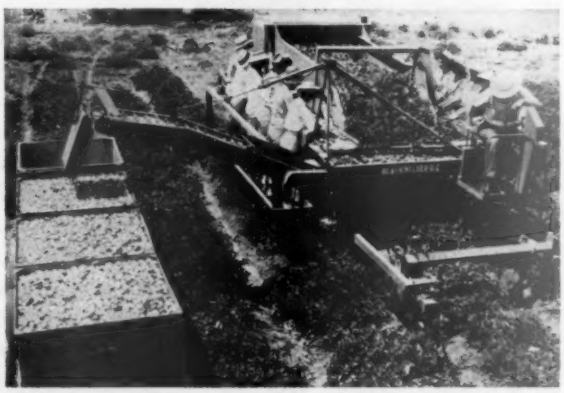
In tests so far, cracking has had about the same effect on corn drying rate as researchers found when they boosted the air temperature from 500 to 700 degrees. Agricultural Engineer Robert Yoerger points out that the tests are in the early experimental stage. The future of the quick dryer depends not only on the mechanical problems of building the field machine, but also on nutrition tests set for later this year.

Pellet-Only Roughage Poses Problems

Dairymen who limit roughage intake of their cattle to dehydrated alfalfa pellets are likely to run into two problems, Colorado State University research shows.

One is severe parakeratosis — the formation of a hard, crusty lining on the inner wall of the cow's rumen. This prevents the rumen from functioning as it should. The other is an apparently significant drop in butterfat content of the milk produced. R. G. Hinders, assistant professor of dairy science, also reports a fairly substantial decrease in milk production. But he questions whether this drop can be attributed to the ration, since earlier tests of a similar nature showed no such reduction.

Mechanization in the Tomato Field



This new mechanical tomato harvester first cuts the tomato vines at root revel. A tine pick-up carries the fruit laden vine to a series of rubber covered horizontal walkers, which separate the tomatoes from the vine. The walkers carry the stripped vines to the rear of the machine and drop them on the ground. The tomatoes are separated from loose dirt and trash as they pass by an air blast on an open bar conveyor. Dirt and trash are also deposited on the gound under the machine, while the tomatoes transfer to a cross conveyor which carries them up to the sorting table. The sorting table is mounted right on the machine, and the sorters ride along with the harvester as it works its way down the rows. After the fruit has gone past the sorting table, it is automatically conveyed into bulk bins mounted on tractor-drawn trailers driving alongside the harvester.

HOW TO

Mr. Gordon Sears is a vice president of the Citizens First National Bank of Princeton, Illinois. He is a graduate of Purdue University and has a masters degree in agricultural economics from that university. He joined the bank staff as a farm representative 10 years ago and works entirely with loan accounts. Mr. Sears is also chairman of the Agriculture Committee of the Illinois Bankers Association. The Citizens First National Bank does not have a departmentalized agricultural section; however, they have seven men that make agriculture loans.

Would you describe the farming area around Princeton, Illinois?

The area is heavy in both livestock and corn production. I think this heavy livestock agriculture developed mainly because at one time we didn't know much about fertilizer and had to have the animals to utilize roughage and maintain good crop yield. We're second in hog production in the state and about fourth or fifth in feeder cattle production.

What is the average size of the farms?

I think the statistics show it to be around 227 acres.

This is not necessarily land all owned by the operator, is it?

No, in fact, for every owner-operator we have, there will be two tenant operators.

And the principle crop would be corn?

Yes. When we go out to analyze a man's ability to repay, we don't see how many feeder cattle he has, or see how much automatic equipment he has, or how big a feedlot he has, or how many hogs his program calls for. We're interested in how many acres of corn or soybeans, or combination of the two, and then we want to know the yield. In other words, I don't hesitate in telling a customer that he should have a minimum production of 8,000 bushels of corn per operator. Actually this figure ought to be 10 to 12,000 bushels of corn or corn and soybeans equivalent. If you don't have that, you're going to have trouble. The principle source of profit isn't in cattle and it isn't in hogs—it's in corn.

When you start to negotiate a loan your banker immediately begins to ask questions — questions that are the basis for the wise use of credit.

1. **How will you repay the loan?**
2. **What is your ability to repay?**
3. **What are the yields and total production of your crops?**
4. **Is your livestock program efficient and adapted to the farm?**
5. **Do you have a sound long-range plan of operation?**
6. **What do your books look like?**
7. **Do you have a budget?**

Mr. Gordon Sears tells in this interview why these questions are so important.

How many banks are in this area that you serve?

Twelve, I believe.

What other private credit and loan agencies supply funds for farmers locally?

Well, the Production Credit Association located at Kewanee and the Farmers Home Administration cover this county. Individuals are also a source of credit in this county.

With this kind of situation, it must be easy for farmers to get all the money they need, then.

More than they need. I say it's easy to get too much credit. The feed companies are in the credit field, the machinery companies are in the credit field; in fact nearly everyone except the fertilizer supplier is in the credit field.

USE CREDIT WISELY

How important is credit today to a successful farm operation?

You just can't farm today without credit! Our number of credit customers goes down every year but our loans per customer are getting bigger. That reflects the fact that there are larger and fewer units.

As I said before, credit is essential. There are no "ifs" and "ands" about it. Where are farmers to get operating money if they don't use credit? At the same time, credit should be handled by people who are qualified and trained to supply it.

What kind of problems do individuals have when credit is over-extended to them?

Let's take a farmer who is having trouble paying the $300 interest a year on his loan. It is decided that instead of loaning him $5,000 at 6 percent, we'll loan him $10,000.

Now you might say we have done him a big service because we've loaned him an extra $5,000. What we have really done is tell him that instead of paying us $300 a year for interest he must now pay us $600.

"I say it's easy to get too much credit."

If that won't do it, next year we'll loan him $15,000 and he pays us $900.

I suppose some would think that this is the answer. To me, the answer is the reverse. If he can't handle the investment on $5,000 we need to cut the total loan back to where he can pay the interest and principal.

In other words, he has to have some extra means of production or income to justify the additional loan.

That's right. The FHA has also taken this attitude the last few years. They won't take over our bank customers unless there is evidence to prove that the farmers are going to increase their income. The FHA says if they can't make a profit and pay off the bank loan, how can they make a profit and pay us?

What kind of repercussions are there in the local trade area when credit is not handled wisely? I'm thinking about the total volume of business that people do if it becomes a general practice to extend credit.

Well, if you have over-extended credit, sooner or later it will cause trouble. That's why we have our ups and downs in our general economy. When you have more extension of credit you have an accumulation of inventory. If you hadn't had too much credit, you wouldn't have too much inventory accumulation.

When we get too much credit out here in our area and the borrowers can't pay it back—well, then we have over-stimulated the economy in the area. And naturally, we are going to go to the other extreme when credit is restricted in order to get repayment.

Suppose I am a local farmer desiring long-term credit for building permanent improvements to increase the size of my livestock operation.

"It's marginal farms that are being hurt and it's not from the lack of credit."

How could we do business?

We probably wouldn't do much business. First of all, we know that there isn't much profit in livestock, particularly cattle.

Prof. Mosher told us years ago that if a farmer had the manure free that's about all the profit he made from cattle. We are not going to loan a man a lot of money on a long-term basis to go into a large cattle feeding operation when we know it's not very profitable.

Another thing you have to keep in mind—the buildings and equipment for livestock, particularly cattle, are small items as compared to the cost of the cattle that must be financed. We are not going to loan very much money to go into a big livestock set-up. We might be a little more liberal on hogs, but it would probably turn into a real estate loan.

Now in dairy, we might finance bulk coolers or pipeline milkers. These would be financed based on milk checks—in other words, a monthly repayment plan.

But to finance feeding cattle or hog automatic equipment which is permanent, we would go into a real estate loan. The answer to your ques-

BE PREPARED

A lightweight McCulloch chain saw is a lot like a mechanized Scout knife—it does more than just cut. One rugged McCulloch engine powers any of the handy attachments shown above—and more—to help you cut firewood, prune trees, dig holes, clear brush, do a hundred and one other jobs. McCulloch offers you the world's most complete line of chain saws, cutter bars and accessories. Nine models as low as **$149.95.** Send for free color brochures.

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tion would be if we furnished it, it would probably be based on real estate.

Keep in mind that we are talking about financing permanent installations. A substantial share of our total credit to farmers is to finance feeder cattle and hogs, and feed for these animals.

Let's say a local farmer with whom you have done business in the past has just acquired another 240 acres of land. He is consolidating and needs more equipment to run this operation. How would you approach that?

Again, it depends on the individual. We are making more machinery loans which are two to three year loans. We will make tractor loans up to three years, and to the right individual we'll even make loans on combines, pickers, and possibly hay balers up to three years. Most of the major items of machinery go up to three years—on other items of machinery not over two years. Of course, this depends on the individual, but that is basically what we do.

Do you assist the farmers in long-time planning—say, looking ahead five or ten years?

Of course we do, and we consider this very important. When a farmer comes in and tells me he thinks hog prices are awfully good and he'd like to buy some brood sows, immediately I become just a little antagonistic toward considering the loan; the reason being, why does he have to buy brood sows? Why doesn't he raise his own? If he had been in a long-term program he'd have had his own sows. But when he doesn't have his own sows, immediately it makes us think that he isn't on a sound, long-term program.

Now if he had come in and said that he had some breeding or disease trouble, and indicates that he would like to buy some gilts to get started again, why then this is a different situation.

This also applies to feeder cattle. We don't like to see a customer shifting from 400-pound feeder calves to 800-pound two years olds. There's just as much difference between handling 800-pound feeder cattle and 400-pound feeder calves as there is between dairy cows and beef cows. It's not the same program at all.

We like a long-term program so we know where they are. We don't want them feeding calves this year, heavy cattle next year, hogs the next year, and dairy cows the next. In other words, we're interested in a long-term program because to us that's one sign of good management.

Evidently there are farmers who jump around.

Yes, and they are poor managers.

Do your good farmers keep records?

Not all good farmers do. We have good farmers who don't keep records. But I would say the odds are in favor of those with the good records. In other words, a man who doesn't keep books may be a good farmer, but he might be a better farmer if he kept them.

Are you a little more receptive to the farmer who comes in and is anxious to lay out his books than you are to the one who doesn't?

Very definitely.

What would you list as other sound credit principles?

I think one of the most important things that a farmer needs to know is how he is going to pay back the loan.

If he comes in and says he needs a definite amount of money and tells us what it's needed for, the idea sounds reasonable and he can tell us how he is going to pay it back, then we have a good basis for doing business.

If he just comes in and tells us he wants money for a combine, we want to know first of all whether he can repay the loan and the second thing we want to know is does he need the combine.

I think that is the most important thing—his ability to repay. It is unbelievable the number of farmers who come in and have no idea whether they can pay the loan back or not. They have no idea what their farm income is. It is no wonder that some of these farmers go under.

How do you use budgeting in working with farmers?

We set up a program for 12

(*Continued on page* 34)

EDUCATIONAL REPORT

A SPECIAL REPORT ON TYLAN™ NEW ANTIBIOTIC

This report outlines current and potential uses of a new antibiotic resulting from research at the Lilly Agricultural Research Center, Greenfield, Indiana.

ELANCO PRODUCTS COMPANY • A Division of Eli Lilly and Company
Indianapolis 6, Indiana, U. S. A.

New antibiotic improves gains in swine, fights CRD in poultry

TYLAN CLEARED FOR THESE USES

SWINE

TYLAN has been cleared for addition to feeds to improve gains and feed efficiency. Recommended levels in complete feeds: Pre-starter rations—100 grams of antibiotic activity per ton; pigs up to 40 pounds — 40 grams per ton; pigs 40 to 100 pounds — 20 grams per ton; hogs 100 pounds to market weight — 10 grams per ton. Supplements may contain up to 100 grams of TYLAN per ton.

CHICKENS

The Food and Drug Administration has cleared both soluble and injectable forms of TYLAN for use in broilers and replacement birds for the control of CRD. Recommendations: Two grams of TYLAN SOLUBLE per gallon of drinking water for one to five days depending on the severity of the infection; one c.c. of TYLAN INJECTABLE containing 25 mg. of tylosin activity per 2 pounds of body weight.

TYLAN RESEARCH CONTINUING

Research with TYLAN indicates promising potentials in these areas of agriculture:

- **As a control for turkey sinusitis and airsacculitis.**
- **As a beef cattle growth stimulant**
- **As a poultry growth stimulant**
- **As a veterinary medicinal for the treatment of several infectious livestock diseases.**

Some 200,000 organisms were isolated from soil samples screened in the Lilly Research Laboratories between 1949 and 1959. While 25,000 showed antibiotic activity, only 300 antibiotics were chemically isolated from this mass research effort. Only four of these have become marketable items.

One of these four is tylosin, an antibiotic with many talents in agriculture. Isolated from a soil sample discovered by a missionary in Thailand, the new antibiotic is being introduced to agriculture as TYLAN.

TYLAN holds great promise for agriculture because it attacks certain Gram-positive and other microorganisms that have not been well controlled in the past. It is highly effective against *Mycoplasma gallisepticum*, the avian pleuropneumonia-like organism (PPLO) that causes chronic respiratory disease (CRD) in poultry.

In the test tube, TYLAN is very effective against swine PPLO and spirochetes. It is also very active against the organisms causing infectious synovitis of chickens, ornithosis, mastitis, and trachoma either in animal or tissue culture tests. In animal tests, TYLAN is highly effective, too, against three species of leptospira, erysipelas of turkeys, one species of avian coccidia, infectious sinusitis of turkeys, and several species of intestinal parasites.

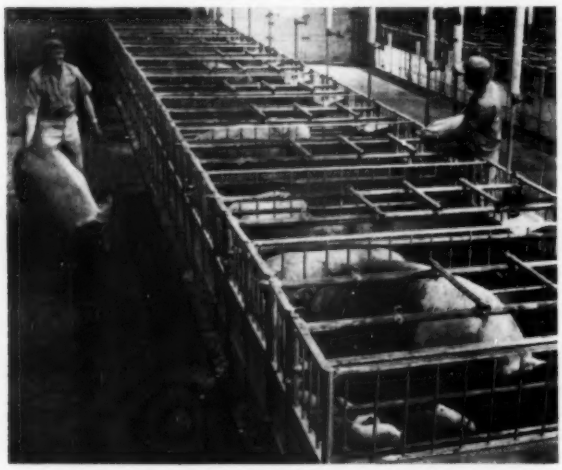
In both laboratory and field experiments conducted over several years, TYLAN has demonstrated its high degree of effectiveness and low order of toxicity. Massive doses have not been harmful to test animals.

TYLAN's unique activity and low toxicity should make it an important addition to agriculture's arsenal of antibiotics.

TYLAN™ improves swine gains, feed efficiency

Several years of study have indicated that TYLAN is outstanding in improving the performance of swine under a great many experimental and field conditions.

Nine experiments have been conducted on market hogs alone at the Lilly Agricultural Research Center. In addition, fifteen field trials in Indiana, Illinois, Iowa, and Wisconsin have been completed. Agricultural colleges in Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, and South Dakota have reported on experiments with TYLAN in swine. Summaries of all these experiments are included in Tables 1, 2, and 3.



Controlled conditions in swine barns at the Lilly Agricultural Research Center provide reliable research answers.

GAINS AND FEED EFFICIENCY

TYLAN has been experimentally fed at levels ranging from 10 to 100 grams per ton of complete feed. Research results have led to these recommendations: 40 grams per ton for pigs up to 40 pounds; 20 grams per ton from 40 to 100 pounds; and 10 grams per ton from 100 pounds to market weight.

At these levels TYLAN has improved swine gains substantially over both control pigs and those fed other antibiotics, as shown in Table 1. TYLAN has also improved feed efficiency over other antibiotics in pigs up to 100 pounds.

In college experiments and field trials, TYLAN has also improved gains over both control pigs and those on other antibiotics as indicated in Tables 2 and 3. Data on comparative feed efficiency in these experiments was not available for the weight categories covered.

PALATABILITY AND COMPATIBILITY

Feed consumption is increased with the addition of TYLAN to the ration. The antibiotic increased creep feed intake of nursing pigs 35.5 percent in one experiment. Daily feed consumption has been increased an average of 20 percent in experiments with pigs up to 40 pounds, resulting in an average improvement in gain of 26% over the controls. While TYLAN has not been cleared for use with other swine feed additives, Lilly experiments indicate that TYLAN is compatible with HYGROMIX®, 3-nitro-4-hydroxy-phenylarsonic acid, and arsanilic acid.

SAFETY

Acute, subacute, and chronic toxicity tests have established the low toxicity of TYLAN. Swine have been fed up to 1,000 grams per ton for fifteen weeks with no ill effects. Cattle have been fed 375 mg. per head daily and sheep have been fed 35 mg. daily with no harmful effects.

No residues of TYLAN could be detected in tissues of swine fed 1,000 grams per ton (25 times the maximum recommended level) when the antibiotic was discontinued 48 hours prior to slaughter.

REPRODUCTION

Feeding sows 100 grams of TYLAN per ton continuously from weaning did not affect their reproductive performance during two gestations. Preliminary research indicates that TYLAN may improve the breeding performance of gilts and sows.

Table 1. Effects of the Recommended Levels of TYLAN™ on Swine Performance in Lilly Experiments.

Treatment	No. of expts.	Avg. daily gain, lbs.	Improved daily gain (%)	Feed /lb. gain, lbs.	Improved feed effic. (%)
Weaning to 40 lbs.					
Controls	7	0.77		2.36	
Other antibiotics	7	0.87	+13.0	2.19	+ 7.2
TYLAN, 40 gm./T.	7	0.97	+26.0	2.12	+10.2
Weaning to 100 lbs.					
Controls	2	0.97		2.94	
Other antibiotics	2	1.06	+ 9.3	2.86	+2.7
TYLAN, 40-20 gm./T.	2	1.21	+24.8	2.84	+3.4
Weaning to market wt.					
Controls	2	1.29		3.21	
Other antibiotics	2	1.32	+ 2.3	3.18	+0.9
TYLAN, 40-20-10 gm./T.	2	1.42	+10.0	3.19	+0.6

Table 2. Effects of TYLAN™ on Swine Weight Gains in College Experiments.

Weight range	No. of expts.	Controls Avg. da. gain, lbs.	Other Antibiotics Avg. da. gain, lbs.	Other Antibiotics Improv. gain (%)	TYLAN Avg. da. gain, lbs.	TYLAN Improv. gain (%)
Up to 50 lbs.	3	0.60	0.76	+26.7	0.86	+43.3
Up to 100 lbs.	6	1.24	1.36	+ 9.7	1.43	+15.3
Up to mkt. wt.	6	1.49	1.58	+ 6.0	1.64	+10.1

Table 3. Effects of TYLAN™ on Swine Weight Gains in Midwest Field Trials.

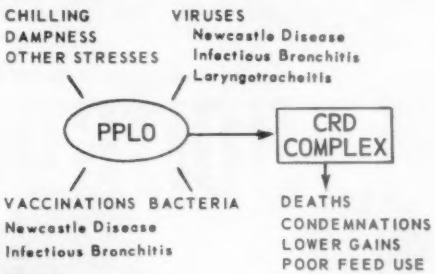
Weight range	No. of expts.	Controls Avg. da. gain, lbs.	Other Antibiotics Avg. da. gain, lbs.	Other Antibiotics Improv. gain (%)	TYLAN Avg. da. gain, lbs.	TYLAN Improv. gain (%)
Up to 50 lbs.	6	0.88	0.95	+8.0	1.00	+13.7
Up to 100 lbs.	7	1.16	1.27	+9.4	1.34	+15.6
Up to mkt. wt.	15	1.21	1.30	+7.4	1.37	+13.2

(This Insert Sponsored by Elanco Products Co.)

TYLAN™ controls CRD in chickens

Chronic respiratory disease has long been considered one of the most costly of all chicken diseases. Condemnations of carcasses due to air sac inflammation (caused by CRD) account for three-fourths of the birds condemned at slaughter.

Condemnation is only a part of the total loss due to CRD. We must add to this losses from deaths, reduced gains, poorer feed use, and lower egg production and hatchability. Losses due to CRD have been estimated to exceed $100 million annually.



SYMPTOMS

CRD infects the trachea, bronchi, lungs, sinuses, and air sacs. Symptoms include coughing, rales, and nasal discharge. The air sacs are usually cloudy or contain pus. Chickens are usually infected from the dam through the egg or by direct contact with infected birds through coughing or sneezing.

In itself, *Mycoplasma gallisepticum*, the PPLO organism that causes CRD, is a relatively mild organism. But in company with stresses such as chilling, dampness, and routine vaccinations, the birds' resistance is weakened. As shown in the above diagram, PPLO then open the way to naturally occurring bacteria and viruses which go to make up the CRD complex. Without PPLO, CRD and the resulting losses usually don't develop.

Lilly experimental infections have repeatedly indicated that antibody levels and PPLO isolations were significantly lower in PPLO-infected birds treated withTYLAN than infected birds not treated. TYLAN-treated birds also had fewer air sac lesions and these lesions were far less severe than in control birds. Birds treated withTYLAN also made good weight gains, sometimes exceeding the non-infected control birds.

In these experiments, either addition of TYLAN to the drinking water or injection of the antibiotic was highly effective in controlling PPLO. TYLAN controlled PPLO even in the presence of vaccination stresses.

FIELD TRIAL RESULTS

Forty-five experiments under commercial broiler growing conditions indicate that TYLAN also controls naturally occurring CRD infections. More than 200,000 birds have been treated with either TYLAN SOLUBLE or TYLAN INJECTABLE in field experiments in Alabama, Georgia, Indiana, Maine, and Mississippi. The tables at right show results of several representative tests.

A 10,000-bird broiler house at the Lilly Agricultural Research Center, Greenfield, Indiana.

SAFETY OF TYLAN

Chickens have shown no ill effects from even massive levels of TYLAN. In one experiment, the antibiotic was fed at 3,000 grams per ton for over four months with no signs of toxicity. No residues have been found in tissues of chickens receiving TYLAN SOLUBLE after 24 hours following withdrawal or in tissues of chickens receiving TYLAN INJECTABLE after 72 hours following injection.

TYLAN's specific activity against PPLO – the causative agent of CRD – makes it especially valuable in containing or preventing the disease. In the past, attempts to control CRD have been aimed at secondary infections – after much damage had been done.

EXPERIMENTAL RESULTS

Forty experiments at the Lilly Agricultural Research Center have indicated the high degree of activity of TYLAN against PPLO. In these experiments, three-week-old commercial broiler chicks were infected intravenously and intra air sac with fully virulent PPLO. At the same time (in some studies a few days or weeks later), TYLAN was either added to the drinking water or injected into the birds.

In these closely controlled experimental infections, some birds were weighed weekly and blood samples taken. Other birds were sacrificed to observe the air sacs and to obtain samples of trachea and severe air sac lesions for isolation of PPLO organisms. Tests were employed to determine if the birds had had sufficient infection to build up antibodies against PPLO.

Table 1. Effects of TYLAN™ INJECTABLE on Naturally Occurring CRD in Four Indiana Field Trials

Treatment	No. birds start*	Deaths (%)	Avg. gain/ bird (lb.)	Improv. in wt. gain (%)	Feed /lb. bird (lb.)	Improv. in feed effic. (%)	Birds condemned (%)
Controls	2,787	2.7	1.75		2.72		1.9
TYLAN 25 mg./2 lb. body weight	3,400	2.3	1.83	+4.6	2.48	+8.8	0.1

*Average initial weight 1.80 pounds.

Table 2. Effects of TYLAN™ SOLUBLE on Naturally Occurring CRD in Six Georgia Field Trials

Treatment	No. birds start*	Deaths (%)	Avg. gain/ bird (lb.)	Improv. in wt. gain (%)	Feed /lb. bird (lb.)	Improv. in feed effic. (%)	Birds condemned (%)
Controls	4,209	12.2	1.67		3.40		4.1
Chlortetracycline, 400 mg./T. 4 days	2,100	4.1	1.75	+4.8	3.32	+2.4	2.8
TYLAN, 2 gm./gal., 24 hours	4,209	3.5	1.84	+10.2	3.06	+10.0	2.0

*Average age of birds at start of trials was 5½ weeks.

Table 3. Effects of TYLAN™ SOLUBLE on Naturally Occurring CRD in Two Alabama Field Trials

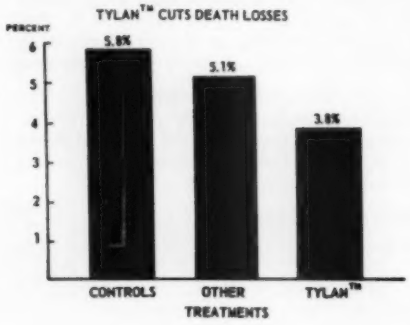
Treatment	No. birds start*	Deaths (%)	Avg. wt. /bird finished	Feed effic. improv. (%)	Birds condemned (%)
Controls	12,600	5.6	3.32		10.9
TYLAN, 2 gm./gal., 24 hours	24,800	6.4	3.54	+7.38	0.9

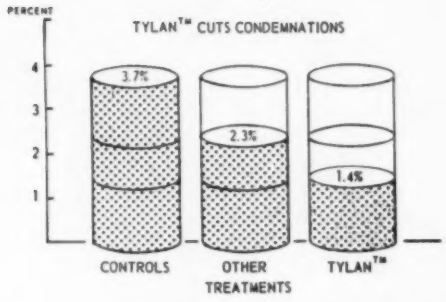
*Average age of birds at start of trials was 6½ weeks.

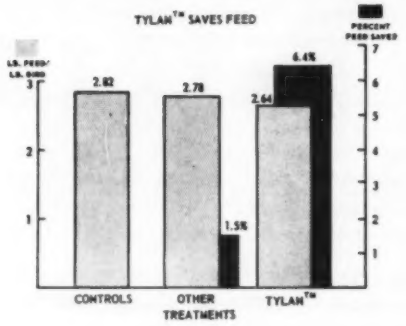
(This Insert Sponsored by Elanco Products Co.)

TYLAN CONTROLS CRD (Continued)

The charts below summarize the value of TYLAN in reducing losses due to CRD in nine field trials in Georgia, Indiana, Maine, and Mississippi. Data in the charts was taken only from experiments in which TYLAN could be directly compared with other antibiotics.







RESEARCH WITH SINUSITIS IN TURKEYS

Infectious sinusitis and airsacculitis in turkeys are caused by PPLO. Transmitted through the egg as well as by contaminated crates, visitors, and carrier birds, the disease affects the sinuses (see below), the upper respiratory tract, lungs, and air sacs.

As a specific agent against PPLO, TYLAN has been highly effective in clearing up sinusitis infections in preliminary experiments. In a series of experiments at the Lilly Agricultural Research Center, 300 PPLO-infected turkeys were injected intra-sinus with from 1 to 50 mg. of TYLAN. Ninety percent of the birds had moderately swollen sinuses.

Two weeks after treatment, the number of treated birds with swollen sinuses had decreased 92 percent, while the

Turkey with infectious sinusitis

Healthy turkey with no sinus swelling

number of control birds showing sinus swellings had dropped only 11.3 percent.

In preliminary Lilly field trials, 770 turkeys were treated with TYLAN. About 60 percent of the birds had swollen sinuses at the beginning of the trials.

During the average 62-day period of the trials, the number of treated birds with swollen sinuses decreased 88 percent, while the number of sinus swellings of control birds decreased 10 percent. Birds treated with TYLAN gained an average of 11.4 percent more than the controls.

While TYLAN is not commercially available, research results indicate that 2 gm. of TYLAN per gallon of drinking water for 48 hours plus 5 to 10 mg. of TYLAN injected into each sinus provide good control of sinusitis.

TODAY'S RESEARCH FOR TOMORROW'S AGRICULTURE

Three, four, five or more years are often necessary to bring a promising compound to the product stage. More than five years have elapsed since the organism producing the antibiotic TYLAN was discovered. In these years, Lilly research personnel have answered many important questions about this antibiotic.

Some of the greatest challenges in agriculture still lie in the areas of animal nutrition, plant science, and veterinary medicine. Lilly agricultural scientists continue to devote their attention to problems in these areas. Their research work today may hold great promise for agriculture tomorrow.

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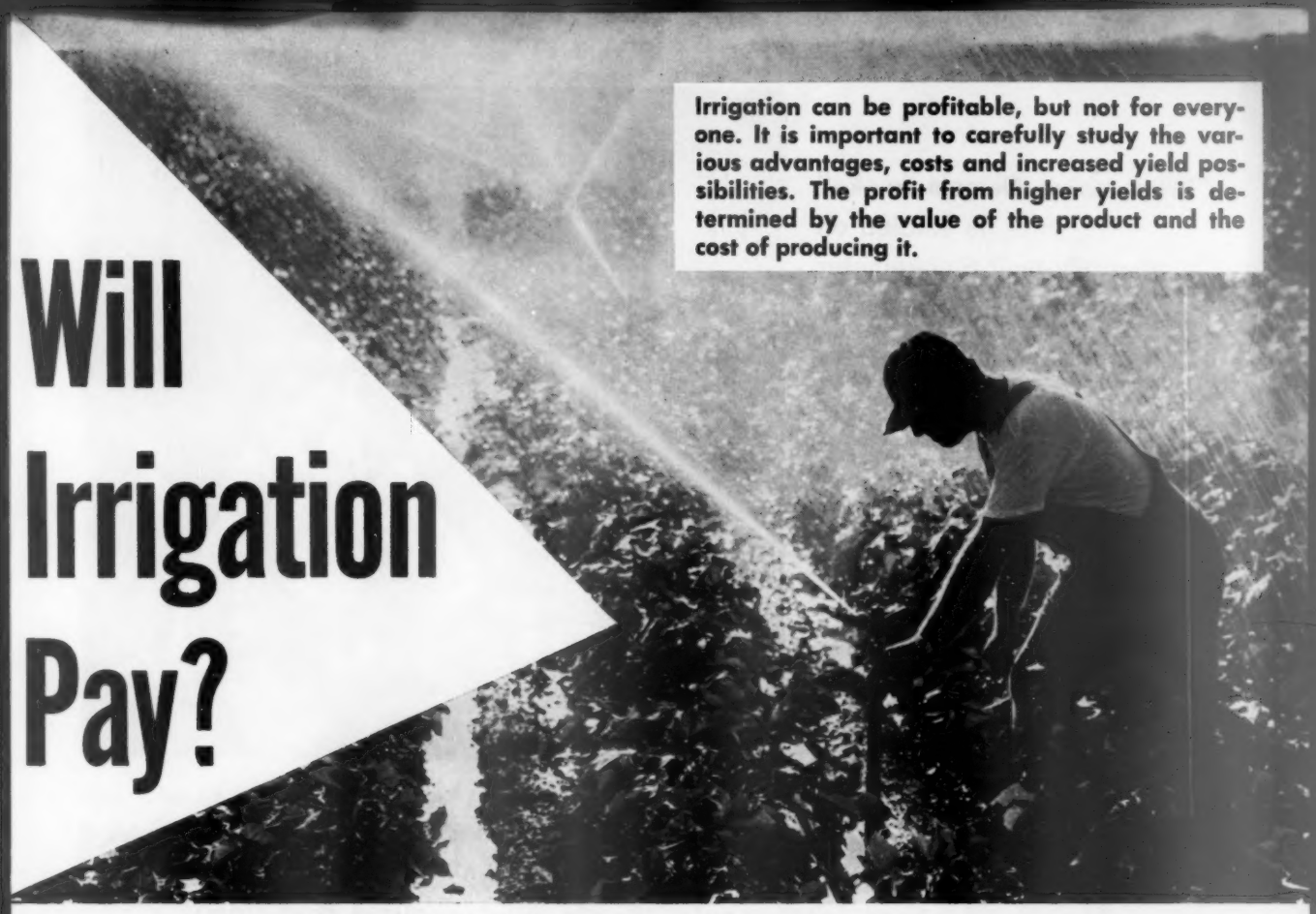
A 726-foot long cattle-sheep barn provides capacity for research in animal nutrition.

Will Irrigation Pay?

Irrigation can be profitable, but not for everyone. It is important to carefully study the various advantages, costs and increased yield possibilities. The profit from higher yields is determined by the value of the product and the cost of producing it.



by John E. Kadlec, Lavon Smith and Dan Wiersma
Purdue University

● INCREASED YIELD usually accounts for the greatest dollar return from irrigation. Sandy soils, because of their low moisture holding capacity, are likely to give the greatest yield response to irrigation.

Since water can come from rainfall as well as irrigation, it is important to consider the rainfall quantity and distribution. Table 1 also shows the chances of receiving various amounts of rainfall from June 20 to September 6, based on rainfall records of the area. Similar records are available for most parts of the Midwest.

Additional dollar returns to irrigation depend on the value of increased yields. High value crops such as corn and specialty crops are likely to give higher returns to irrigation than lower value crops.

Improved quality is another factor that contributes to higher returns. Irrigating vegetables frequently increases returns as a result of improving quality and making a higher percentage of the crops marketable. Irrigation may also increase returns when used to prevent frost damage to such crops as strawberries and fruits.

Quality in field crops is not often measured, but research has shown that more minerals are taken up by plants that have adequate moisture. And, corn not subjected to drouth is usually better filled and thus of higher quality.

Intensified livestock operations are possible with irriga-

(*Continued on page* 37)

Table 1. Years out of one-hundred that various quantities of rainfall are expected and the corn yields expected from these rainfall quantities on Fox sandy loam soil, Sullivan county, Indiana.

		Estimated yield[1]	
		80 lb. nitrogen	160 lb. nitrogen
In. rainfall June 20 to September 6	Years out of one-hundred expected	13,000 seeding rate	21,000 seeding rate
Inches	Yr./100 Yr.	Bu.	Bu.
0-4	6	16[2]	8[2]
4-6	16	46[2]	35[2]
6-8	23	75[2]	72[2]
8-10	22	101	103
10-12	15	109	116
12-14	9	112	123
14-16	4	112	128
over-16	5	108	129
weighted av.-8.78		84	85

1 Assumes high levels of phosphate and potash and relatively uniform rainfall distribution.

2 Estimates—other yield data are based on experimental plot data. Purdue Agricultural Experiment Station, Project 816.

"What makes Diesels smoke" is studied on specially-built Smokemeter at American Oil Research

Excessive smoking in diesel engines is a signal that can mean improper combustion—loss of power—excessive fuel consumption. The kind or color of the smoke is a factor, too, as well as the amount. To enable us to measure smoke scientifically—and thus build a fuel that is exceptionally low in smoke—American Oil Research assembled this Smokemeter which measures smoke density by means of a special photo-electric cell.

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WHO Will Do Your Bargaining?

by Dr. Kenneth D. Naden

Any one of several economic groups may someday represent you in the market place. These groups consist of the integrated processing and manufacturing firms, the labor unions, and the federal government. However, only farmers are likely to bargain for farmers. Others who would supposedly represent farmers at the bargaining table would really be bargaining for themselves.

● FARMERS ARE FULLY justified in being concerned over who will bargain for them—who is going to represent them in markets in which they sell farm products and buy farm production supplies. This is because of a familiar law of human behavior — "Those who fail to make decisions for themselves will find others making decisions for them."

The phrase, "Who will bargain for farmers?", implies that any one of several economic groups in the future may bargain for farmers. We assume, of course, that only farmers *should* bargain for farmers. I believe, however, that a little analysis leads to the conclusion that only farmers are likely to bargain for farmers. Others may organize farmers in certain ways or purport to speak for them, but they really are bargaining for themselves. They will not bargain for farmers except as it serves their own self-interest. Only farmers have their own self-interest in the forefront, first, last, and always.

Discussion of this question, "Who will bargain for farmers?", arises mainly from the sweeping changes in organization of farmers and in the production and marketing of broilers in the Southeast.

It is clear that broiler processors, feed manufacturers and dealers, hatcheries, equipment dealers and others simply went into the broiler production business and hired or contracted with farmers to do the growing and feeding for them. They did this for the purpose of private profit. It is only incidental that the growers' income rose above what it would have been otherwise. One significant effect, however, is that this kind of vertical integration changed farmers from major contractors to subcontractors with a bonus for efficiency.

The broiler growers not only were helpless to stop it but readily acceded to it because it represented economic progress to them. Hence, we can expect further developments of this kind unless farmers protect and insulate themselves against it—unless the profit opportunities are foreclosed to others—unless farmers have the kind of organization and the kind of bargaining power to take advantage of economic opportunity.

This experience with the broiler industry is an example of non-farm firms in processing and manufacturing moving further into agriculture. What are the prospects for further action of this sort? It depends to some extent on the ability of farmers to grow and deliver the "right product".

The general surplus environment is also a factor. The existence of agricultural surpluses has reduced the incentives for non-farm firms to take over certain production activities in agriculture. By this I mean the incentive of meat packers to feed and raise livestock; the incentive of retailers to organize and operate egg production farms; and the incentive of canners to plant and grow peas, corn, peaches and other fruits and vegetables.

The reason is that our present agricultural production system—with relatively small-scale, efficient farmers — reduced cost of production rapidly and was sustained by a large body of farmers willing to work for low wages.

If food was scarce or if farm prices were high we might have an incentive for vertical integration much greater because buyers might be able to obtain products

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at lower costs. Our experience in this regard in World War II is revealing. We had a number of food chains, for example, buying meat packing plants and going into the cattle feeding business in order to obtain a dependable supply of the products. Cost, at that time, was not so important.

In a broader context, non-farm firms are invited to integrate into agriculture whenever and wherever such action will raise sales and profits for the firms.

Labor Unions Interested

A second type of non-farm group that has shown signs of interest in bargaining for farmers is the labor unions. Teamsters, in particular, already have organized directly some poultry farmers into locals of the Teamsters International Union and have shown interest in organizing dairy farmers in other areas. We all know from observation that many labor unions have been extremely successful in achieving a high and persistent degree of barganing power for themselves. The desire to obtain a certain measure of this same degree of bargaining power is a great incentive to farmers to align themselves with labor unions.

A fundamental mistake would be made by farmers in believing that the bargaining power exercised by labor unions is the same kind and type of bargaining power to be exercised by farmers. That exercised by unions represents the power of coercion. That which can be successfully exercised by farmers represents the power of persuasion. The reason is because of the presence of competing products. A strike to achieve higher prices by hog producers, for example, would result in nothing but an accumulation of fat hogs and an immediate switch by consumers to beef, chicken, turkey, fish and other substitute products. In order to be effective, a strike for higher prices by hog producers would have to be accompanied by suppression of all substitutes. Labor unions have been able to do this by eliminating use of "scab" labor during a strike.

A third non-farm group or agency which under some circumstances may yearn to speak for farmers is the federal government. I doubt if this prospect is as realistic and current a danger as the others presented above, but it is here in the background. A chronically depessed sick industry is a prime candidate for the government to step in and take direct responsibility for economic decisions. The government certainly has a great role to play creating economic conditions under which each economic group can earn a fair income but this is much different from direct intervention and control of activities of the group.

Hence, we have in the background of our own general farm problem the danger that non-farm groups, determined to protect and enhance their own bargaining power, may move into a vacuum and thereby eliminate or seriously jeopardize farmers' opportunity to enhance their legitimate interests.

Article abstracted from a talk made by Dr. Kenneth D. Naden, National Council of Farmer Cooperatives, at the summer conference of the Maine Cooperative Council, University of Maine.

NEW BOOKS

THE FARM MANAGEMENT HANDBOOK, published by The Interstate Printers and Publishers, 19-27 North Jackson Street, Danville, Illinois.

AUTHORS: I. F. Hall and W. P. Mortenson, College of Agriculture, University of Wisconsin. DATA: Third edition, cloth bound, 425 pages. PRICE: $6.00.

Farming today is a highly competitive business and cannot be successful on a hit-or-miss basis. It has to be approached scientifically, with knowledge and understanding of the factors which determine success or failure.

The prior editions of this book were widely used in vocational agriculture classes throughout the nation because of its dual nature of being both a textbook and a handbook. As a textbook, the teacher will like the special features that make it the most teachable book in its field, from the "Highlights" which introduce each chapter to the "Questions and Answers" at the ends of the chapters.

This is also a farm management handbook — that means you can look in it for answers to your problems. It covers such areas as farm leases, field arrangement, financing the purchase of a farm, government aid to farmers, father-son agreements, and many, many more.

HIS HOME-MADE AIR COMPRESSOR SPEEDS ON-THE-JOB REPAIRS!

Building his own labor and time-saving devices, such as the air compressor shown here, is the worthwhile hobby of Rodney J. Breaux, who farms 850 acres near Welsh, Louisiana.

Starting with the base of an old compressor, Mr. Breaux made the air tank from a four-foot length of 16" pipe. The compressor was connected to the tank with copper fittings and tubing. He removed the drive pulley and replaced it with a universal joint and power take-off adapter.

"I find my compressor indispensable for making quick repairs in the field during harvest time," Mr. Breaux says. He uses it for lubricating field machinery, inflating tires, spraying insecticides, painting and many other chores.

This progressive farmer has been a user of Texaco fuels and lubricants for many years, because he has found them best for farm equipment. He knows he can depend on Marfak lubricant to form a tough collar around open bearings, sealing out dirt and moisture.

PHOTO SHOWS *Mr. Breaux using a pneumatic greasing unit with his air compressor, which is powered by his tractor.*

HE PREFERS HAVOLINE!

W. E. Church, who farms 455 acres near Woodburn, Kentucky, uses Texaco Products for fueling and lubricating his costly equipment. He prefers Advanced Custom-Made Havoline Motor Oil, for example. Havoline's exclusive combination of detergent additives prevents harmful engine deposits and wear. For this reason, engines deliver full drawbar power, and more fuel mileage. Left to right in photo are Texaco Consignee Roy Phillips, W. E. Church and his son, B. E. Like farmers everywhere, Mr. Church has found that *it pays to farm with Texaco Products.*

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Do you have to specialize?

Do you ever get the feeling you're being pushed toward more intense specialization? The "WHY" of this reveals great pressures being exerted on farmers. There are two major aspects of our changing technology which are bringing about this greater specialization. These are the development of large specialized equipment and the increasing complexity and needed know-how of farm management.

by Dr. C. E. Bishop
North Carolina State College

● COMMERCIALIZATION of American agriculture is being accompanied by a striking increase in specialization on farms. This is particularly true in the production of livestock and poultry products.

Specialization is taking a number of different forms. The number of major enterprises per farm is decreasing. More farmers are specializing in certain phases of the production of farm commodities. Specialization is also occurring through the transfer of jobs which were formerly performed on farms to nonfarm firms. Farmers are purchasing more supplies, management services and other services once produced almost entirely on the farm. Processing of farm products is increasing rapidly, but less processing is taking place on the farm and more is being shifted to nonfarm industries.

The current increase in specialization also represents a further break from a subsistence-oriented agriculture and a move to a more highly commercialized agriculture. More farmers are discontinuing production of milk, eggs, pork, and even vegetables for home use and are concentrating upon the production of products for sale.

Continuous New Technology

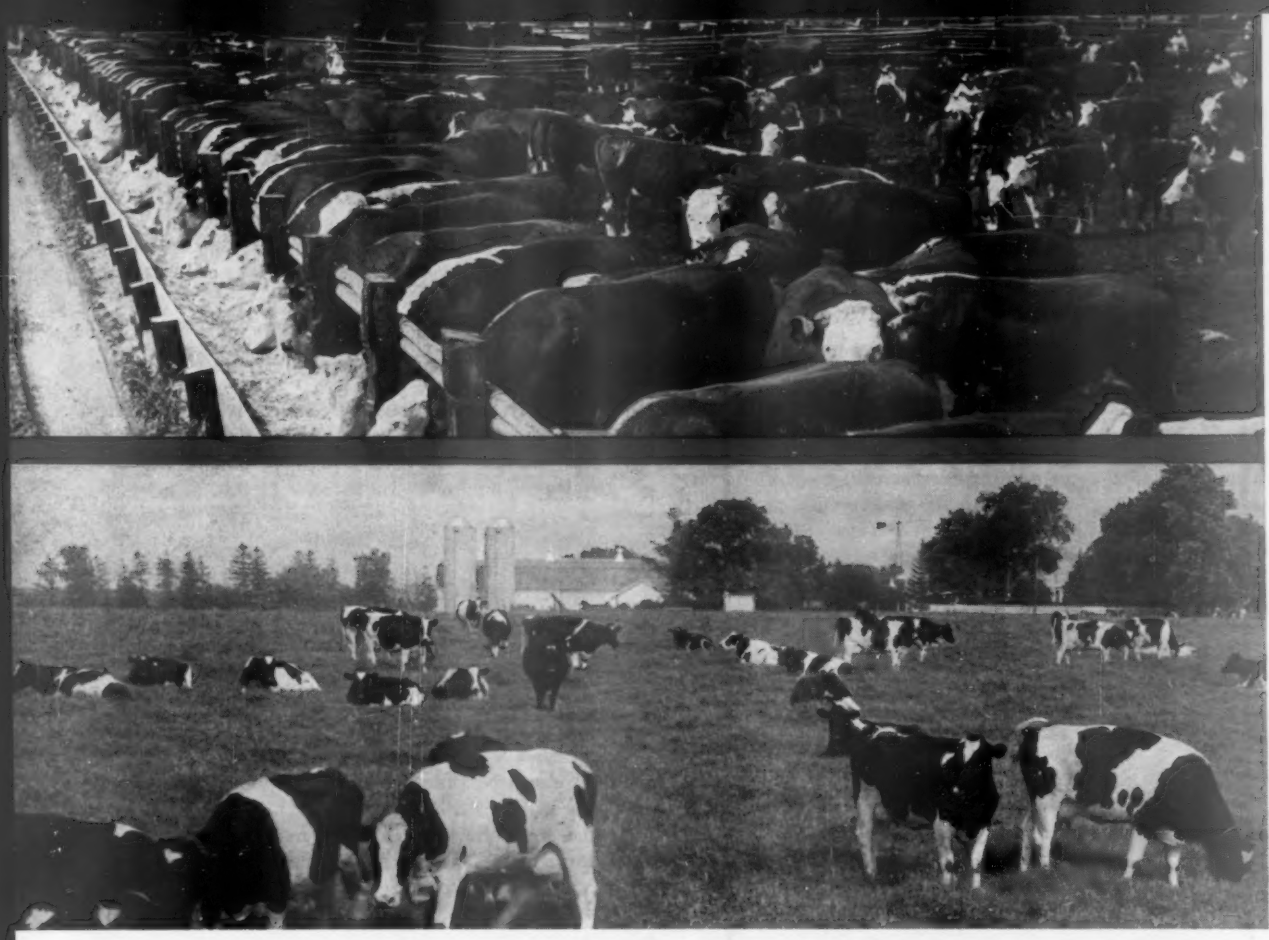
At the heart of the drive to increase specialization lies the impelling force of a stream of new technology resulting from the continuous search for new and better ways of producing and processing farm products. There are two major aspects of changing technology which are bringing about greater specialization in agriculture. These are (1) the development of specialized equipment to be used in the production and processing of farm products and (2) the increasing complexity of management resulting from increased knowledge with regard to production of farm products.

Much of the specialized mechanical equipment which has been developed is costly. The purchase of this equipment requires an increase in the investment of farms and processing plants. This investment increases costs of production at low levels of output and much of the equipment cannot be purchased profitably without an expansion in production thereby reducing the fixed costs per unit of output.

In view of the large investments required to purchase much of this modern equipment, unit production costs decrease sharply as output is expanded to the point that relatively full use is made of the equipment. Technological development in the form of specialized mechanical equipment, therefore, is contributing to increased size of the enterprise for which the equipment is developed and to a reduction in the number of enterprises produced on individual farms.

Increasing Capital Needs

The large amount of capital needed to purchase modern equipment is another factor contributing to specialization. Farmers encounter difficulty in acquiring the capital needed to purchase modern equipment and operate it on a profitable



scale for a wide variety of farm products. Also, technology is changing so rapidly that the costs of obsolescense add additional incentive to make full use of specialized equipment. Faced with limited capital and costly equipment, farmers specialize in order to make more effective use of the equipment.

Much of the equipment which has been developed in recent years is capable of producing so much and is so expensive that it is impractical to use it on farms as they have been organized in the past. Economies of size involved in the operation of this equipment are so large that it has been profitable to transfer many jobs which were formerly done on farms to nonfarm firms. Only in this way could sufficient volume of production be assured that the purchase of the equipment would be profitable.

The development of new knowledge regarding the production and processing of farm commodities has contributed to increased specialization in another way. As greater knowledge becomes available regarding the production of a commodity the number of steps involved in production is increased and it becomes more difficult to master and carry out these steps. The farmer must remember when and how to carry out each step.

Cannot Know Everything

Through specialization management practices can be standardized to a greater degree and management can be simplified. Research conducted at North Carolina indicates that mastery of the complex processes of modern farm production severely limit the number of enterprises which can be successfully produced on farms. This is especially true in the case of farmers who are seeking to make rapid development of their farms by adding new enterprises. Modern farming has become so complex that it simply is impracticable to effectively develop efficient managerial skills for several new farm enterprises at the same time. Attempts to develop several enterprises at the same time usually result in low production efficiency and high cost.

The knowledge and equipment required to do an efficient job of producing a commodity varies with the phase of production concerned. This is one reason why farmers specialize to a greater extent in some phases of production than others. The technology and equipment necessary to do an effective job of producing milk, for example, are quite different from that necessary to grow dairy heifers. Technological developments do not take place at the same rate for all phases of production. When some phases are affected by technological change, the results often involve an increase in the size of the enterprise or a transfer of that phase of production to other units which specialize in it.

Transfer of Jobs

The transfer of jobs from farms to factories and the conversion of farms into factories have been underway for many decades. This process will continue as new knowledge is gained into the mysteries of producing and processing farm products. The extent of the development of specialization and the transfer of functions from

(*Continued on page* 35)

How Can We Move People Out of Agriculture ?

Feature from "Economic and Marketing Information for Indiana Farmers", prepared by The Agricultural Staff, Purdue University.

A changing and growing economy must move labor from one industry to others. The free market accomplishes this redirection of labor by lowering the wages in an industry which needs fewer people relative to those in industries needing more workers. Whether we like it or not this is the way it works.

by G. Edward Schuh
Purdue University

● A GOOD PORTION of what is called the farm problem arises from the need to transfer workers out of agriculture and into the production of goods and services which society presently values more highly. Technology and other economic forces have made it possible for fewer farmers to produce the agricultural needs of the American people. To society as a whole this is very desirable, for it means that we have more workers available to supply medical and dental services, automobiles, TV sets, schools, improved highways, and other goods that we have come to associate with a higher standard of living or economic growth. In fact, a good measure of the well being of a country is the proportion of its labor force available to produce goods and services other than agricultural products. Wealthy countries can in general produce their agricultural needs with a small proportion of their labor force.

Not Everyone Shares Equally

As a country experiences economic growth not all members of the economy share equally. Until the adjustment is completed people who have to move from one employment to another have lower incomes relative to other members of society. Agriculture, in the postwar period, has not shared equally in the rising incomes of other sectors of the economy because of these conditions.

As long as it is necessary to transfer people out of agriculture, those employed in agriculture will continue to have lower incomes relative to other members of society. Furthermore, the more out of adjustment the labor force is at any point of time, the more farm incomes will lag behind those in the nonfarm sector. Therefore, it is useful to examine how far out of adjustment our agricultural labor force is at the present time. Some historical perspective will help evaluate the present lack of adjustment, and shed some light on the immediate income prospects in agriculture.

Let's take hired labor, one resource that farmers use, and see how far out of adjustment it has been historically. Since changes in the hired labor force and the total farm labor force have been similar over time, a study of

the hired labor force should illuminate the total labor adjustment problem.

Figure 1 is a comparison of the actual hired labor employed by the agricultural industry with the desired level since 1929. The difference between the two, the shaded area, indicates the size of the adjustment problem at any point of time.

What Is Desired Employment

Desired agricultural employment is the amount of labor that would have been used if farm operators were completely adjusting to changing economic conditions in their use of hired labor, and if the laborers were making similar adjustments. Desired employment is important since people do not adjust immediately to changing economic forces. They do not adjust rapidly because it takes time to learn what the new economic conditions are as they continue to change; economic conditions frequently reverse themselves; and changing production plans and places of occupation involve costs.

These considerations suggest that economic plans are made on the basis of a several year period. Farm people, and others, tend to plan for the long pull, rather than being "inners and outers."

But in studying the adjustment problem, it is useful to compare the amount of labor that would be used if people did adjust completely to changing conditions — desired employment — with the actual level of labor used. The difference between the two, the shaded area of Figure 1, is a measure of the adjustment problem.

Perhaps the most striking result of this comparison is

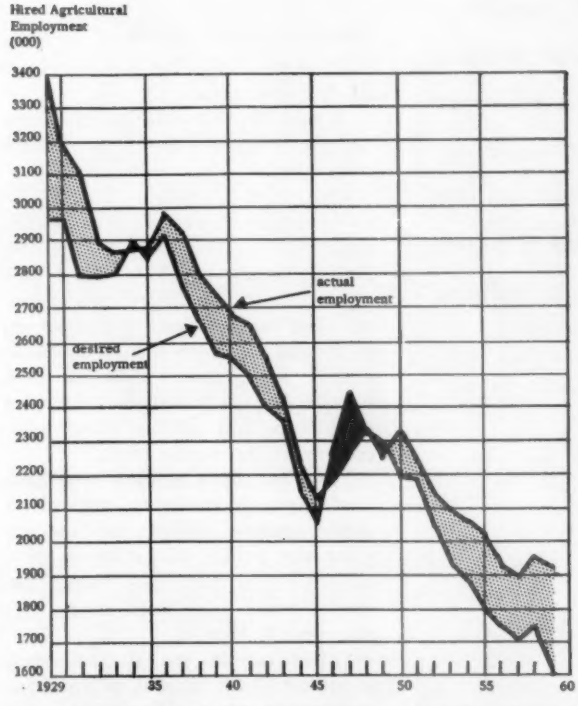


Figure 1. Comparison of desired employment and actual employment, 1929 to 1959.

that throughout most of the period since 1929 the actual level of employment has been in excess of the desired level. The two exceptions are 1934 when farm prices had a temporary rise, and the wartime period when increased demand for food and fiber and migration of family labor to non-farm employment encouraged increased use of hired labor.

Throughout this 30-year period there was need to transfer labor to nonfarm uses. And of course the transfer *was* taking place. The performance of a free economy in transferring labor from farm employment to non-farm uses in this period has been nothing short of phenomenal. But even this adjustment was not enough, and to the degree that it was not, returns to labor have lagged behind what they would have been.

Situation Not Correcting Itself

A second finding of the comparison is that the gap between desired employment and actual employment has been widening in recent years. Since 1951 the labor force has moved further and further out of adjustment. In the 10-year period from 1936-45 the desired level of employment declined 30 percent; the actual level of employment declined 29 percent. In the more recent 10-year period from 1950-59, the desired level declined 26 percent, but the actual level of employment declined by only 17 percent.

Clearly the labor market is not bringing the agricultural labor force into adjustment as well in the recent period as it did in the former. Reasons for this will be discussed only briefly. It appears that the "easy" adjustment is behind and that future labor transfers may be more difficult.

First, the more mobile people have already left agriculture for other employment. For instance, young people have left the farm for urban employment, leaving behind a farm labor force composed of a larger proportion of older people. And, those who did not have a strong preference for farming have already left for urban jobs. Those who are left are less willing to leave their family and community ties for an uncertain urban job, despite the higher wages they might receive there.

Second, industries in the nonfarm sector are demanding a labor force with a higher skill level. This was pointed up in the most recent recession, when, despite the high level of unemployment, urban newspapers were filled with ads seeking skilled labor. This is partly because employment in the manufacturing industries — a heavy demander of unskilled labor — has been declining in recent years.

What Can Be Done?

Two suggestions evolve from this discussion. First, the increasing importance of a good education. The well educated individual is more mobile and has a much wider range of available opportunities. And second, government programs, be they local, state, or national, to retrain individuals for new jobs or increasing their skill level, can help transfer labor, and thus bring the farm labor force into adjustment. Both improved formal education and re-training programs can contribute to an eventual solution of the farm problem.

Do They Really Dislike Us?

Urban opinion is running against farmers. You'll find arguments pro and con regarding that statement. There is no doubt that farmers need a good, well-organized public relations program. However, this is easier said than done. Here is the first in a series of three articles that will try to point the way toward a better public relations program for agriculture.

by Richard E. Geyer

● "UNPRECEDENTED NUMBERS of urban residents are taking sides in the farm controversy," Dr. R. D. Lewis, Director of the Texas Agricultural Experiment Station told the American Cotton Congress two years ago. "And many of them are not friendly to agriculture as they understand it."

Not long ago Agriculture Secretary Orville Freeman had this to say in The Progressive Farmer: "Much of the nonfarm public is critical of, even hostile toward, agriculture."

Similar exhortations have come from growing numbers of farm leaders and journalists in the past several years.

Agriculture has developed a massive persecution complex to complement its other ills.

We think something is wrong with our "public relations," but a solution stumps us. "We are losing the understanding and respect of the American people," former Secretary of Agriculture Claude Wickard said. "We feel that loss keenly, but we don't know what to do."

Some Say We're Friends

Have we really lost the friendship of our city cousins?

A substantial but little-heard contingent of agri-leaders says we have not.

One of the group's foremost spokesmen is Frank R. Neu, Public Relations Director for the American Dairy Association. "I've been very much involved in many discussions of what the problems are supposed to be and what we should do about them," he relates. "Most of these discussions are based on our own statements that appear about agriculture in the public press."

"Not too many studies have been made through marketing research or public opinion polling to find out what the public thinks about agriculture," Neu continued, "but those studies which have been made suggest several things:

"Most people are so concerned about their own narrow, personal interests that they will not take the

(*Continued on page* 29)

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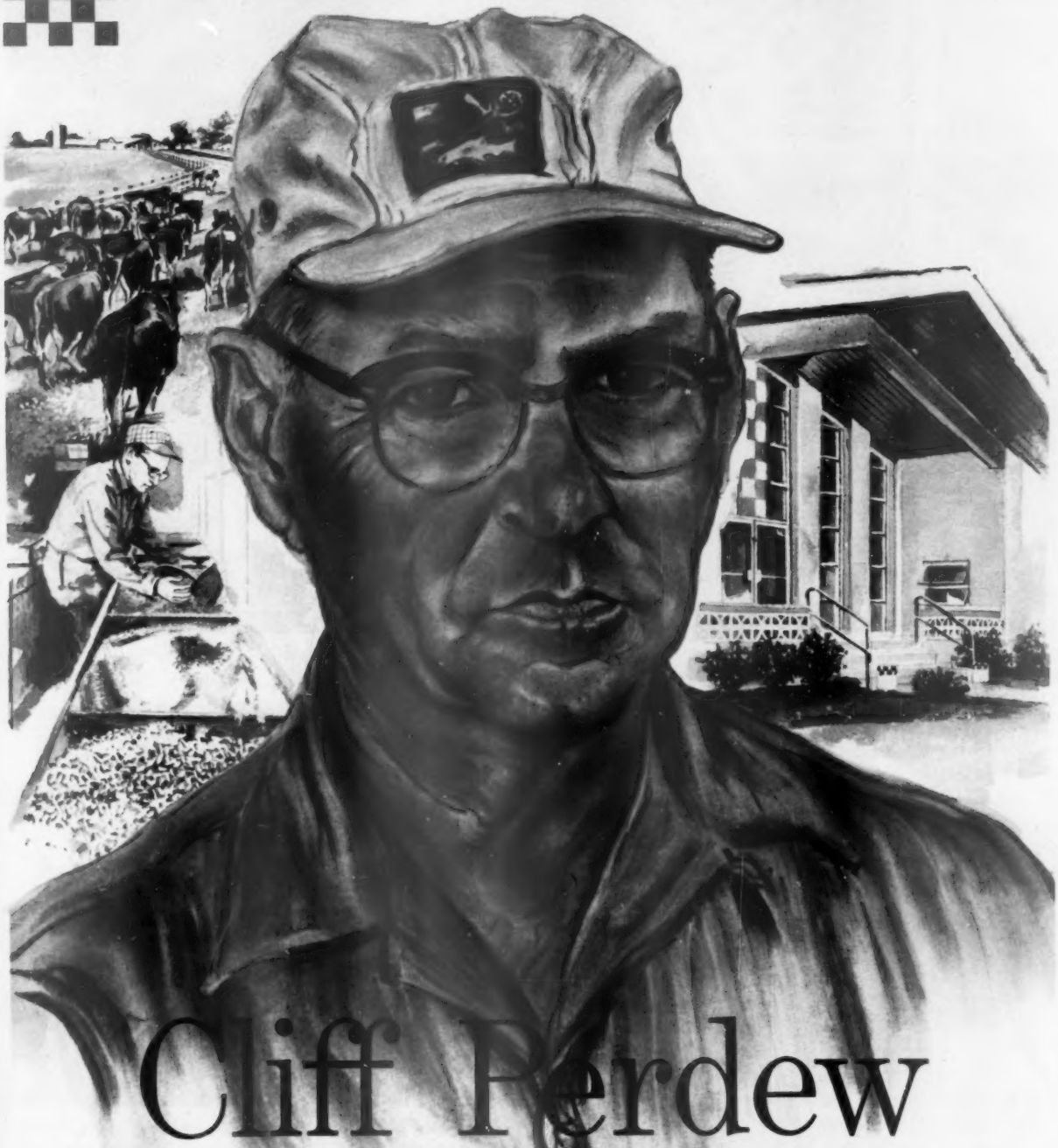


Cliff Perdew

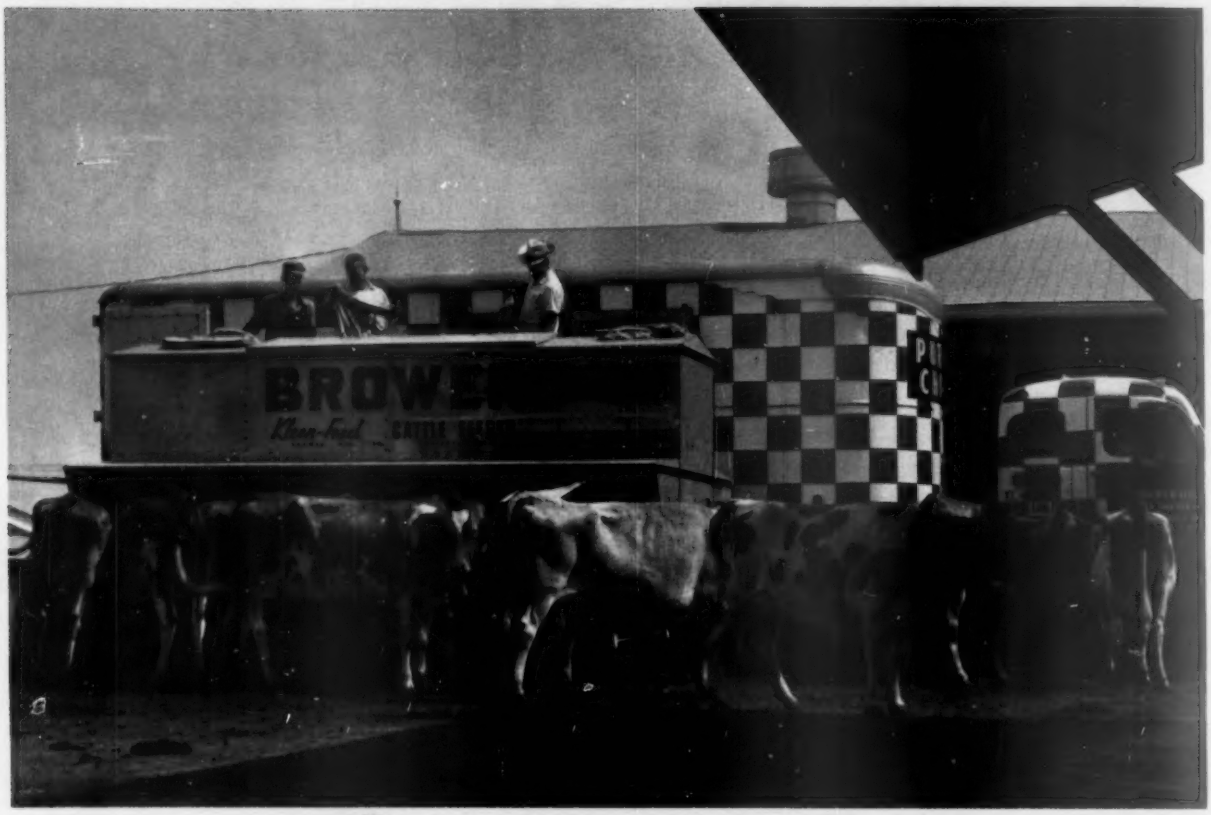
. . .top hand dairyman at Purina's Research Farm for 34 years

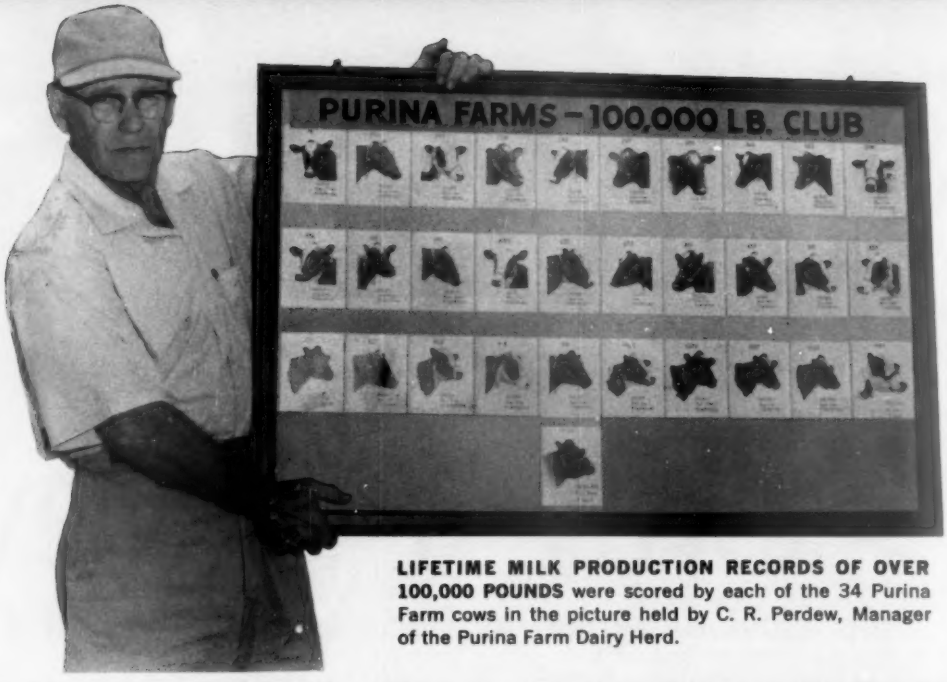
Clifford R. "Cliff" Perdew came to the Purina Research Farm, June 8, 1927 (when he was twenty-three years old), shortly after graduating from Missouri University College of Agriculture.

Cliff says, "At that time there were four dairy calves on test. We got busy fixing up the old Dairy Unit, which we used till a year ago, and bought eighteen or twenty head of local Holstein cows, none milking. Later, we went to Wisconsin and bought a carload of better quality grade Holsteins. That's the way we started, adding grade Guernseys in 1934.

How dry cow feeding program began

"Our dry cow feeding program sort of started by accident. We had a cull cow we were going to ship but decided to fatten her up first. Then we noticed she was springing and figured we would keep her until she





LIFETIME MILK PRODUCTION RECORDS OF OVER 100,000 POUNDS were scored by each of the 34 Purina Farm cows in the picture held by C. R. Perdew, Manager of the Purina Farm Dairy Herd.

freshened. That old cow did so well we immediately began experiments on dry cow feeding and heifer growing rations. Eventually our experiments led to the marketing of Purina D & F Chow and our entire Purina Heifer Growing and Dry Cow Feeding Program.

Purina heifers freshen early—give lots of milk

"At the Purina Farm we freshen heifers at 22–24 months against 28–30 months at the average dairy. The way we grow heifers, they come closer to producing at the top of their bred-in ability with their first calf . . . reach their peak sooner and stay there longer. Where an average heifer might produce 70% of her top production during her first freshening, our heifers would come closer to 80%. While our bigger, growthier heifers often reach their peak in a couple of years, average heifers may take five or six years."

COWS ON COMPLETE RATION are fed from self-feeder. This feeding method, which is nearing practical use, will save labor, allow for handling many more cows in small space.

A PURINA FARM VISITOR makes friends with a youngster at Purina's Calf Unit. Here, calves are started on Purina Nursing Chow and Calf Startena on the fourth day. *No more milk is fed.*

HEIFER GROWING DEMONSTRATIONS like the one below are held across the country. They prove the benefits of Purina's Calf Growing Program. Ask your Purina Dealer for facts on raising calves Purina's Way.

Purina Calf Chows developed early

Since the early 1890's college research men were interested in developing feeds to raise calves cheaper—using less whole milk. Purina scientists, building on their work, developed Purina Calf Chow Meal in 1915. Twenty-one years later Purina Calf Startena—a dry complete feed—was developed. This product was a time-saver and milk-saver which more nearly met the calf's nutritional needs. It was followed in 1952 by Purina Nursing Chow, which is truly "milk plus." It replaces *all* milk after three days, and is extra fortified to protect calf health.

Low mortality—bigger calves at 4 months

The success of the Purina Calf Feeding Program is clearly written in the Purina Research Farm records. Of 2207 calves born—all raised on Purina calf starting programs—less than one per cent have failed to grow to maturity. At four months calves grown on Purina Nursing Chow and Calf Startena are far bigger and growthier than the average. Note these weight comparisons at four months:

	Average weight	Purina average weight
Jersey	176 lbs.	200 lbs.
Guernsey	177 lbs.	225 lbs.
Holstein	260 lbs.	320 lbs.

Artificial breeding used at Purina Research Farm

"We've used artificial breeding since 1939 and now use frozen semen from registered, proved Silver and Gold Medal sires. *We didn't buy a single replacement heifer from 1927 until August, 1957,* when we began to add purebred heifers from high producing herds for the Danforth Farm Youth Center project.

"We now milk 115 cows. Although our research interferes with production . . . and emphasis is on research, not records . . . the herd produces better than twice the milk and butterfat record of the original herd," says Perdew.

34 Purina cows produced 100,000+ lbs. milk in lifetime

"The record of our 34 old cows, each of which produced over 100,000 pounds of milk, is a good recommendation for the way we grow and handle dairy cattle from the calf and heifer period, during lactation and as dry cows. Greatest single producer was cow number 907. She produced 180,377 pounds of milk in 11 lactations. Number 1116 actually produced 12 calves—the first ten of them heifers—and gave 146,576 pounds of milk in 11 lactations. But for a fall on the ice, she might still be with us! *These records look pretty good when you consider the average life of a cow is 5½ years!*"

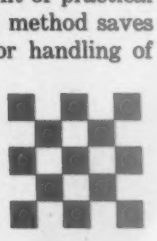
High efficiency rations developed

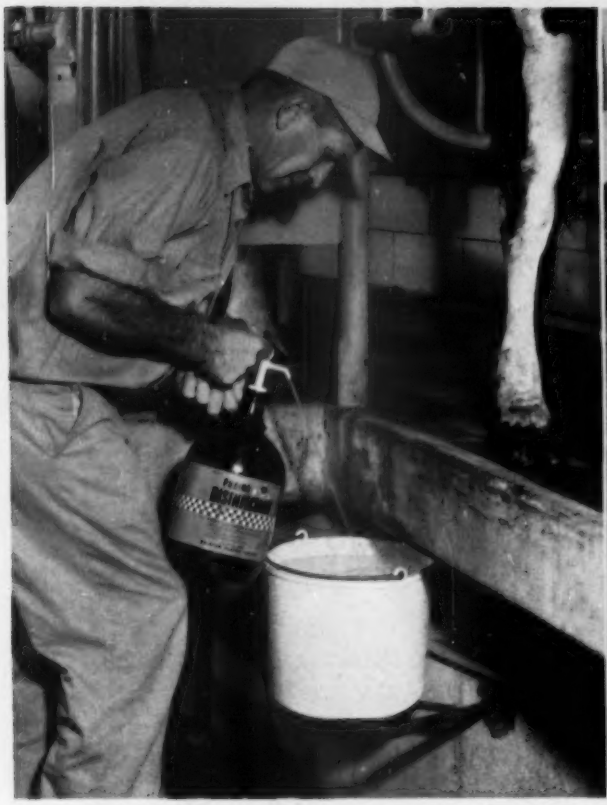
"After years of formulating rations to please the eyes of dairymen—bulky, coarse rations of pleasing appearance—the cows convinced us this type of ration *did not* make the most milk.

"Our present high-efficiency rations include ingredients with highest milk-making energy; more corn or milo, less beet pulp, bran and oats.

"*Complete feeding is just around the corner.* Our original work on complete feeding of cows began in the '30's. It's now being adjusted, is near the point of practical use. This 'Built-in-Roughage'™ feeding method saves labor through self-feeding . . . allows for handling of more cows on less ground."

Cliff said, "We're pioneering today, just as we were in 1927. We will keep on testing new ideas, new methods and new rations in the interest of making dairying more profitable."





You can help prevent and control mastitis by using Purina Disinfectant solution as a flank and udder wash before milking cows.

Purina iO-Dairy is especially made for hand-washing and sanitizing milking machines, utensils, bulk milk tanks and other equipment.

Purina Dairy Health Aids tested at the Purina Research Farm

Working with the Farm herd, Purina Research has developed a complete line of dairy disinfectants, cleaners, and insecticides to fight profit-robbing diseases and parasites. Purina Health Aids, used as suggested on this page, help protect you from disease losses.

Disinfect stalls, equipment—use Purina Disinfectant Spray walls, gates, and equipment with Purina Disinfectant solution after washing with C & S Powder. It's harmless to skin when used properly . . . won't corrode equipment. Purina Disinfectant is widely used as a flank and udder wash and as a teat cup rinse to help prevent the spread of mastitis.

Purina iO-Dairy sanitizes utensils, milking machines You can wash and sanitize your milking machines, utensils, and bulk tank with Purina iO-Dairy—an iodine-type detergent, sanitizer, and milkstone remover. It's also an effective flank and udder wash before milking, and a good teat cup rinse.

TRY PURINA'S DAIRY FEEDING PROGRAM

—developed at our own Dairy Unit in 34 years of testing. Feed right—just as Purina recommends. Keep records to prove to yourself that feeding Purina returns much more than the little extra it may cost.

Your Purina Dealer . . . at the Store with the Checkerboard Sign . . . is the man to see for details of feeding programs and forms to keep your feeding records. Pay him a visit . . . and make it soon!

PROVE TO YOURSELF . . .
Purina feeding costs you less

Do They Really Dislike Us?

(*Continued from page* 24)

time to become aroused about national problems, including whatever the agricultural problem or problems might be. In other words, there are very few non-farm people who are aware of the problems of agriculture or who are alarmed by the unfavorable publicity about government farm programs.

Attitude Has Not Changed

"Generally, the people have a friendly feeling toward farmers. All of the unfavorable publicity about how a few farmers have managed to get rich by abusing price support programs has not changed the general public attitude toward farm people."

Neu has a paralleling example. He cites results of just-completed attitude surveys measuring reaction to the unfavorable publicity linking animal fats to heart disease. Few people have been influenced to change their diets, Neu reports.

"Urbanites think that farmers, more than any other groups, deserve government help if anyone does.

"Not even federal spending for agriculture worries the people. Payment of taxes for most people is so painless today that little is done to arouse general concern about how tax money is used."

An informal survey of six other agricultural thought leaders—officers in farm organizations—found only one disagreeing with Neu's position. Their evidence? Personal contacts. Typical is the response of C. Maurice Wieting, vice president for Information and Education, Ohio Farm Bureau Federation. "Most city people whom I know are sympathetic with farmers and believe that they are doing a remarkable job of supplying all of us with food and fiber," he said. "While many are poorly informed about agriculture, most of them are friendly."

Attitudes Have Changed

Those who say farmers have lost the historic good will of urbanites give evidence, too. Dr. Lewis, whose remarks appear in the opening paragraph, based his conclusions on comments from "legislators and other influential citizens." Secretary Freeman cited "correspondence received by the Department, comments made to and reported by Department field people throughout the country, impressions gained and passed along to us by many leaders of thought and action in both rural and urban life, and the overwhelming burden of unfavorable editorial comment in the larger metropolitan newspapers."

How, then, can conclusions about urban opinion differ so much? First, let us recognize that the opposing views are not mutually exclusive. Too little is known about the total picture. Are we talking about the grease-smeared production line worker in a Detroit assembly plant, or the ivory tower metropolitan editorial writer whose efforts few bother to read?

Agricultural leaders in different areas can observe attitudes of different urbanites—and arrive at different conclusions.

Politics Play A Role

But politics inevitably enters the picture. The recently-inagurated Federal government public relations campaign in behalf of the farmer was partially motivated, the *New York Times* opined, by a desire to change public attitude to one of "support for stronger government action in agriculture's behalf."

Bill Foreman, Public Relations Manager of the National Cotton Council of America, questions, too. He says that if Secretary Freeman's objective is merely to let the people know what a good job the farmer is doing and what he is contributing to our way of life, that's fine. But if the purpose is "to build up the American public so it will accept, without question, government takeover of agriculture, this will set the cause of agricultural public relations back even further."

Then, too, the extent of consumer disenchantment with farmers is not a simple black or white matter. Some say city folks are hostile. But William J. Kuhfuss, President of the Illinois Agricultural Association, describes the urbanite's attitude as one of "skepticism" rather than hostility.

The USDA's Director of Information, R. Lyle Webster, believes that urbanites are in the process of

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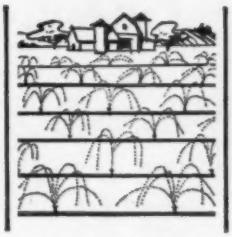

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changing their attitudes toward farmers. "They are somewhat puzzled and even becoming antagonistic toward farmers," he said.

Issues Affect Attitudes

In contrast, Orville Jones, Director of Research and Education for the Ohio AFL-CIO, thinks factory worker attitudes toward farmers fluctuate depending on specific issues. As an example, he recalls that feelings against farmers ran high when the Ohio Farm Bureau opposed labor's 1955 attempt to improve unemployment compensation. Later, however, when the Ohio Farm Bureau refused to take a position in favor of right-to-work, "the tide turned somewhat in the opposite direction."

We do not propose that agriculture close its eye to an actual or potential problem. Nor do we say that any or all of the public relations efforts already under way are not needed. As Wieting said, "Anytime you are in a minority you have to watch your public relations."

The point is that we need to learn much more about attitudes. Surveys are the basic step in a public relations program for agriculture, Foreman maintains. But extensive studies of urban opinion are lacking, farm leaders report.

We do know that there's enough smoke to warrant thorough investigation. Vern Freeh of Michigan State University, who made an informal survey of approximately 100 urban residents said there was little resentment or hostility, "but there could easily be." With more and more city people now several generations removed from the farm, ignorance becomes a potent vehicle for hostility.

The seeds for urban revolt are well known, but let us review them briefly:

Surpluses and subsidies: These can do the most harm, Foreman says.

Do Special Favors Hurt Us?

The major objection city people have to farmers writing their own farm program, a *Minneapolis Tribune* poll revealed, is that the farmers "would tailor the program to their benefit, at the expense of other taxpayers."

Preferential legislation for farmers has a long history and urbanites have apparently accepted it. Yet there is some evidence that special favors

harm the farmer's public image.

"Farmers too long have felt they were a privileged class and should be looked up to," a former farmwife now prominent in an agriculturally-connected organization told me recently. "They should realize that they have to operate like any other businessman—or try something else."

Disproportionate political power: "Urban resentment against farmer political domination is multiplying yearly," Dr. Lewis warned.

Farmers' conservatism: There are enough examples to make charges of "obstructionism" stick. Item: Rural voters led in voting revenue restrictions that resulted in drastic curtailment in the operations of several Michigan schools recently.

Item: City-dwelling union members complain that fellow workers who are farmers lack interest in the unions that represent them. Jones said, "I think the average worker feels that farmers are ultra-conservative in their economic and political thinking."

These, then, are trouble spots. Who should initiate studies to find out how danger-laden they are? The farm organizations, certainly. Businessmen that supply the farmer or process his products. The ag colleges and experiment stations, often criticized for supposedly helping create the surpluses. Any group that has a stake in agriculture's future.

Comprehensive studies would guide development of public relations programs. A vital question they should answer is slant. Should public relations efforts be pointed toward the masses of voters and taxpayers? Or just editors, writers, civic leaders, educators and other influential people? Or legislators and other elected officials? Or all these?

Before useful public relations blueprints can be prepared, however, we must face other questions:

What objectives can we hope to achieve? Should we aim, as Dr. Lewis suggests, toward "consumer acceptance not only of our products, but also our services, policies and our true place in the total economics of the nation and the world?"

What can public relations do and what are its limitations? Neu says: "The most that public relations specialists can do is serve as catalysts in trying to get the facts to the right people at the right time." Foreman declares that public relations can't be separated from our actions: "Public relations is both living right and getting credit for it."

We know that regardless how good our actions and our public relations are, there will always be some criticism. How much can we tolerate?

In subsequent articles we will ask those who question the extent of urban dissatisfaction with farmers for frank recommendations on public relations programs. Another article will review the public relations programs that are already underway and in the planning stage.

TAX PROBLEMS IN A RURAL-URBAN AREA

● FAST-GROWING METROPOLITAN AREAS are creating tax problems for farmers whose lands lie in the ever-widening path of these developments. Efforts by states to cope with these problems are summarized in a publication recently issued by the U. S. D. A.

Although still used for farming, rural lands on the fringes of big city suburbs are often assessed for tax purposes at the same value as adjacent lands already developed as housing subdivisions or shopping centers. In addition to higher assessed values, tax rates on fringe farmlands also have gone up as local governments seek ways to finance new and expanded public services for suburban communties. As a result, many farmers unable to meet mounting tax bills from farm income are being forced to sell their land years before it is ready for development and before it will bring a price commensurate with its potential value.

The publication entitled "State Action Relating to Taxation of Farmland on the Rural-Urban Fringe," considers three legislative approaches adopted by various states in seeking a solution. It also contains samples of instruction to local tax assessors issued by several states in an effort to handle the problem without enacting special legislation.

Copies of "State Action Relating to Taxation of Farmland on the Rural-Urban Fringe," ERS-13, are available from the Office of Information, U.S. Department of Agriculture Washington 25, D.C.

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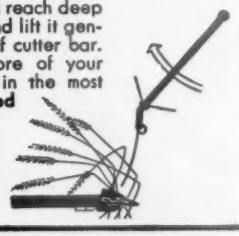
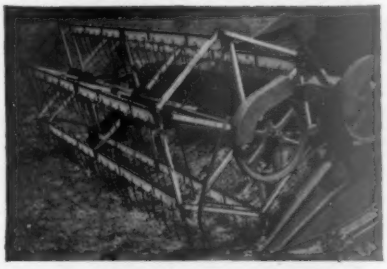
1—SAVE SHATTER LOSSES: Narrow edge of bat enters grain vertically, avoiding **shatter-impact** of wide-edge entry. Six bats divide crop — lift it evenly across cutter bar, reducing sickle shatter.

2—SAVE SKIPPING LOSSES: 8" long, curved, spring-steel fingers reach deep into crop and lift it gently ahead of cutter bar. **Picks-up** more of your crop even in the most **down-tangled** condition.



3—SAVE SEPARATION LOSSES: Crop is lifted **across** sickle **onto** header as cut — does not **pile up** on sickle. This even feeding reduces cylinder slugging — provides more complete separation.



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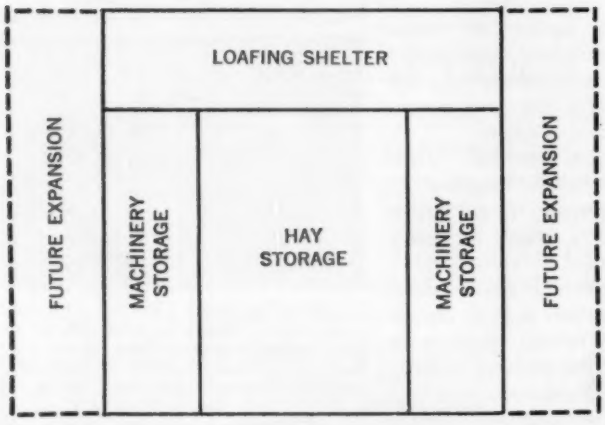

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How to Use Credit Wisely

(*Continued from page* 10)

months in advance with many farmers, especially the younger men. Sometime in November or December we'll do our detailed planning and at that time we set up the man's credit and payment schedule for the coming year.

Now suppose a farmer comes in and we have financed him for the past year. Perhaps he hasn't paid the loan off because he still has the hogs and the cattle on hand and he also has the corn in the crib. We will revamp his line and set up the present loan to be paid out of hogs, fat cattle, or corn when they are sold. At the same time, he will advise us as to how much more credit he will need the following year and this will be included as additional under the mortgage. Then, credit is extended to him as it is needed during the coming year to meet operating expenses.

When we set up the additional amount we have to have some standards and that is where the budget comes in. We need to know approximately what he is going to need. It's just amazing how far out of line many farmers will get. They just have no idea how to budget.

What services can a local bank such as this one with farm men offer that other lending agencies in the area cannot offer?

Our bank furnishes complete, one-stop service, checking accounts, savings accounts, other miscellaneous banking services, as well as all types of credit. We also have a field representative trained in farm management.

We know in some of the areas where farmers have gone out of business quite rapidly that the lack of credit is blamed for this movement out of agriculture. Would you comment on that?

In general, agricultural banks today are providing adequate credit. Naturally, there are some country banks that are not taking care of credit needs of their community. However, these situations are the exceptions. When someone comes in and says that the cause of farmers being forced out of business is because of lack of credit, I just don't believe it.

First of all, there are marginal areas and farms in the Corn Belt and as we get into these fringe areas the corn production drops. As things begin to tighten up and we get only 90 cents to one dollar per bushel for corn instead of $1.50, who is going to be hurt first? Is it the good farms in the Corn Belt where we get 100 bushels of corn to the acre and where we have 50-80 percent of the land in cultivated crops? Or is it out in the fringe areas and poorer farms where they get 60-70 bushels per acre and only 30-40 percent of their cultivated land? The answer is obvious.

It's marginal farms that are being hurt and it's not from the lack of credit. In fact, there is too much credit. The farmers on these farms don't have the "ability to repay" because of low production and low prices. I'm very critical of anyone who says the cause is from lack of credit. Narrow profit margins per unit of production (low prices) and low production per man is the problem.

How does credit fit into the farm management picture?

Sound farm management maximizes the profits from a farming operation without destroying the capital investment — land. This means adopting a rotation to the capability of the soil. Naturally, $600 per acre land should have a much higher percent of the farm in cultivated crops than $300 per acre land. Good management means obtaining crop yields that will make the largest net profit per acre. Sound management also includes sufficient livestock to consume roughages and grain produced on the farm, utilize off-season labor, and provide sufficient profit to justify the additional risk and labor. Naturally, this requires modern efficiency machinery and equipment. Good management is the proper balance in the utilization of labor and capital in order to obtain a maximum level of net farm income. To accomplish this requires large amounts of capital. In our area the capital invested in land, machinery, livestock and grain will exceed $100,000 per

farm worker. Credit, properly handled, is needed on most of the efficient, well-managed farms.

Good farm management includes intelligent use of credit.

Keep in mind that a farmer should never borrow money at 6 percent unless he has a reasonably good chance of making this same money earn him more than the 6 percent. With average investment returns on farms being under 4 percent, this requires good management.

Mr. Sears, this has been a most interesting interview. Thank you for your time.

It has been my pleasure. Come back anytime.

Do You Have to Specialize?

(*Continued from page* 21)

farms to nonfarm firms will be governed by the development of new technology. The results of these changes will unquestionably involve a greater degree of interdependency of farms and agriculturally related businesses. In the future it will become even more difficult to determine where a farm begins and ends. Even more functions will be transferred from farms to nonfarm firms. In turn, more nonfarm firms will become dependent upon farmers. Greater coordination of decisions between farms and agriculturally related industries will be essential.

JASPER TWEED

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WASHINGTON NEWS

by Jay Richter

Wheat Becomes a Weapon

Mounting world crises ranging from Berlin to Russian nuclear testing has forced a shift in emphasis in administration thinking regarding agriculture.

As Washington willingly yielded its hot humid summer to the cooler, clearer atmosphere of autumn, this nation's food abundance became a number one asset for the alternatives of crisis: War or peace.

In the event of catastrophe — the emergency the world fears but prays will not occur — Civil Defense and the USDA moved to relocate wheat storage facilities to place at least a two weeks supply within easy reach of the great metropolitan complexes of the East and West costs.

The idea is that if 160 million bushels are so situated, survivors of some destructive attack on the big cities would be able to find the raw material to meet their minimum diet needs for at least a fortnight.

The program, estimated to cost 47 million dollars, has been discussed in Congress pro and con, but the chief argument against it centers on the question of whether stored wheat would survive either the bombing or fall-out any better than the people who are expected to consume it.

Agriculture Secretary Freeman maintains that if people are desperate enough, American ingenuity plus wheat may pull this nation through.

And his chief comeback is the virtual clincher: We don't have much to lose by trying and we might have a lot to gain as a result.

Secretary Goes On the Road

As his own contribution to the new emphasis on food in international affairs, Secretary Freeman made his first trip to Europe in September on a trade fair mission to London and a European Common Market trip to Brussels.

But before departing, he really tossed the spotlight on food for peace by announcing his October-November journey plans that would carry him to the under-developed countries of Asia, the Middle East, and Africa.

During that trip, along some of the same routes former Secretary Ezra Taft Benson traveled, Freeman will attend a Cabinet Ministers conference in the Far East and the Food and Agriculture United Nations Organization meeting in Rome.

Freeman admitted he had no preconceived notions of what he might accomplish during the trip, but he said he thought it important to convince the skeptics in some neutral areas that America's food and fiber are a more constructive weapon for peace than anything Communism had offered the world in recent months.

Not a New Program

And this brought to many a Washington observer's renewed attention the history of food for peace.

It really began in World War I days when Food Administrator Herbert Hoover carried some of America's farm productivity to the starving families of Belgium and Holland. U. S. food was also a vital foreign policy instrument during and immediately after World War II.

But it got its modern launching in 1954 with the adoption of Public Law 480 — that federal program which permits us to sell our surplus commodities to dollar-deficient countries for their own currencies.

Added to some free food distributions, the United States has sent 30 billion dollars worth of food and fiber overseas since 1954. This is some 26 percent of our total exports during the same period.

For the doubting Thomas' who contend we have just poured good money after bad in giving our food surpluses to others for cheap or soft currency, the Administration is this year doing a lot of talking about Spain.

The Spaniards have been a big user of U. S. Public Law 480 supplies over the past seven years. This year, for the first time, they have become a big dollar market for our farm products. Foreign Agricultural Service experts contend the chief reason is Spain's improving economy which has been able to expand because it could obtain much needed food for its own currencies during years when dollars were hard to come by.

Food and Foreign Policy

Food and foreign policy are now one and the same for the United States.

This was made fairly clear to much of Latin America at late summer's conference in Punta Del Este, Uruguay.

When we unveiled our multi-billion dollar aid program for the Americas we made it clear that food would be the big item in helping our Latin friends get on their feet.

So food may yet win an uncertain peace as well as help us fight a war the world hopes can be avoided. At least it is one commodity the Communists cannot match. And that view is getting increased stress from the White House to Capitol Hill.

Our Food Is Friendship

Meanwhile, the Administration appeared to be offering a partial answer to Russia's atomic weapons testing by pointing up the Western world's availability of food for mankind.

With uncommitted or developing nations, this was a strong talking point in winning more friends for the U. S. than the country has enjoyed since World War II.

WILL IRRIGATION PAY?

(*Continued from page* 15)

tion. With proper management the seasonal carrying capacity of pastures and grain crop yields can be substantially increased. Also, irrigation eliminates wide fluctuations in available feed caused by year to year variations in rainfall.

Double-cropping systems are another method of intensification. Vegetables or winter wheat are harvested early in the season permitting a second crop, either a forage or a short-season crop such as soybeans. Double cropping is usually most practical with irrigation because an adequate moisture supply for the second crop, particularly at germination time, is insured.

Complements Fertilization

Fertilization can be geared to plant needs without regard to rainfall expectations. Because farmers who irrigate fertilize on the basis of high soil moisture, their yields are much higher even in extremely wet years than the yields of farmers who do not irrigate. Fertilization and irrigation complement each other i.e.; when both are used together the returns are greater than the sum of the two used separately.

Irrigation also provides a means of applying fertilizer at any time. Fertilizer may be applied slowly throughout the growing season in the irrigation water. The returns to irrigation are influenced by fertilization.

Labor is usually one of the largest irrigation costs. On the average, it takes an hour of labor per acre inch of irrigation water applied on row crops. Irrigation may be an excellent way to use excess labor. On the other hand, if the labor during July and August is already utilized, irrigation may put a "stress" on labor and reduce returns from some enterprises.

Acres irrigated influences the cost per acre. A 1955 Purdue survey of 23 farms indicates water costs per acre irrigated of $28.82, $19.17, and $15.58 per acre when an average of 49, 110, and 227 acres were irrigated. The cost economy comes mainly from spreading the high fixed cost of equipment over more acres. Fixed costs were about 60 percent of the total cost.

Water source influences fixed cost. In the same survey 16 farms had an average investment of $2,366 in wells, while seven farms secured water from streams and reservoirs with no investment. The group with wells had a much higher fixed cost than the others.

Water applied per irrigation influences the cost per inch. Labor cost for moving and setting equipment is almost constant regardless of the amount of water applied. Therefore, cost per inch of water decreases as the quantity per application increases. In the previously mentioned survey, seven farms applying 1.37 inches per application had variable costs of $2.15 per inch, while eight farms applying four inches per application had variable costs of $1.33 per inch. It must be remembered, however, that each additional inch of water applied on a particular application brings less additional yield.

Investment in equipment averages about $100 per irrigated acre: If capital is restricted, returns to this capital from alternative enterprises must be considered when deciding whether or not one should irrigate.

The relevant question is "Will irrigation pay over a period of years?" Each farmer must consider the factors mentioned in view of his own particular situation. Irrigation is not profitable for everyone, it is profitable for some.

Let's Budget Irrigation

Now let's observe an actual case where we will budget the profitability of irrigation for a particular soil type, rainfall distribution, fertilizer and seeding rate, and irrigation cost.

Mr. A lives in Sullivan county, Indiana, on the bench land of the Wabash River. His 200-acre farm is mainly Fox sandy loam and is fairly drouthy. Mr. A. is considering irrigated corn production.

Table 1 shows the corn yields Mr. A can expect with different seeding rates, nitrogen levels, and water levels. The table also shows the chances out of 100 of receiving various amounts of rainfall (from weather records). Now if Mr. A does not irrigate, he will no doubt use the lower seeding rate and nitrogen application and average 84 bushels of corn over a long period of time.

On the other hand—if Mr. A. irrigates, he will likely use the higher nitrogen level and seeding rate and can deliver any desired amount of water. Increased production from irrigation and higher nitrogen and seeding rate is the difference between 84 bushels and yield he selects in the right hand column of Table 1.

Mr. A has budgeted his irrigation costs. Fixed costs are established at $10 per acre and variable costs are $2 per acre inch. Extra nitrogen would cost 10 cents per pound, potash, 4.5 cents and phosphate, 9 cents.

Mr. A figures that with water costing $2 per inch and corn selling for $1 per bushel his most profitable level of water is 14-16 inches (Table 1). Increasing water from 12-14 inches to 14-16 inches results in 5 bushels of corn with $4 water cost. The next two inches of water would return only $1. Mr. A's returns per acre to irrigation are:

Irrigated yield	128 bu.
Non-irrigated yield	84 bu.
Increased yield	44 bu.
Dollar return .80 corn	$35.20
1.00 corn	44.00
1.20 corn	52.00
Mr. A's estimated costs are:	
Fixed cost per acre	$10.00
Six inches of irrigation @ $2.00 (av. rainfall 9 in. plus 6 in. irr.)	12.00
Nitrogen—additional 80 pounds	8.00
Additional phosphate, potash and seed	7.00
	$37.00
Profit per acre from irrigation	
.80 corn	—1.80
1.00 corn	7.00
1.20 corn	15.80

If Mr. A, with a drouthy soil, could keep his irrigation costs below average and keep fertilizer application in line with water he could increase profit through irrigation if corn price is $1. On the other hand, if the corn price is much below $1 he could not afford to irrigate unless he already has irrigation equipment available. If he does have irrigation equipment the $10 fixed cost will be incurred even if he does does not irrigate.

Adapted for Economic and Marketing Information for Indiana Farmers, Purdue University, Lafayette, Indiana.

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Farm Labor —

Future will mean a further decline in labor along with rising wages.

● INCREASING INSTABILITY in farm labor, a further decline in the amount of labor required, and rising wages will be the pattern in the future farm labor situation.

That was the conclusion of a group of economists participating in a symposium on farm labor at the August 13-16 American Farm Economic Association meeting at the Colorado State University.

Sheridan T. Maitland of the Economic Research Service of the U.S. Department of Agriculture, Washington, D.C., said a decline in the total amount of labor required by agriculture is almost certain, despite an anticipated increase in agricultural production. With this decline in labor requirements, there will be increasing instability of employment for farm laborers.

Off-Farm Jobs Needed

"Demand for large numbers of seasonal workers will continue, but the decline will come in general requirements. Many off-farm jobs will be needed to relieve unemployment of farm workers and part-time farmers," he said.

Lester Rendler, of the U.S. Bureau of Employment Security, Washington, D.C., says farm employers are not in a position to provide regular, full-time work. On the other hand, employees can't rely on intermittent, part-time farm work.

He suggested farm labor be dovetailed with off-farm work in processing and shipping firms to provide year-round employment for workers. Farm and non-farm labor is becoming intertwined.

Three factors may provide the pressure to increase farm labor rates, according to Frank H. Maier of the USDA's Economic Research Service. These possibilities are: Extension of the minimum wage law; unionization of farm labor, and reduction of foreign labor importations.

"What Farm Leaders Are Saying..."

The Assistant Commissioner of Agriculture for Virginia, **Richard D. Chumney,** recently spoke to a group of agricultural leaders in Virginia. He was speaking about the Industry of Agriculture and told his audience that "We must realize that farming in the future will be more a question of adjusting our farms to technology than of adjusting technology to our farms."

He also said, "We may also have to learn to apply the economics of industry to agriculture as well as applying the technology of industry to agriculture."

• • •

"If we look at the total gain in productivity in agriculture over the past 100 years, 70 percent of that gain occurred in the last 20 years and almost 50 percent in the last 10 years," said **Nathan M. Koffsky** in a talk before the Agricultural Relations Council. Then Koffsky, the Administrator of the Department's Economic Research Service said, "It seems clear that the fruits of productivity in agriculture have been substantially translated into lower prices benefitting the economy at large whereas other sectors of the economy have managed to retain much of their gains in productivity."

• • •

C. J. Hein says, "Urbanization will continue to spread out into the rural portions of our metropolitan areas, bringing such problems as urban sprawl, traffic congestion, slums, automobile 'graveyards', and ribbon development along the highways. Both the traditional rural systems of government and many of our present urban governments are inadequate to cope with these problems. If local governments are to meet these metropolitan problems, they must be modified. In the long run, rural residents will benefit most if they take an active part in bringing about the necessary adjustments in local government in metropolitan areas."

• • •

A popular conception about U.S. agricultural exports has been labeled erroneous by **Mr. Walter Klein,** President of Bunge Corporation, a leading exporter of U.S. farm commodities. "Many people have the idea," **Mr. Klein said,** "that we gave away most of the nearly 5 billion dollars worth of American farm products that were shipped abroad last year. But the truth is, only 6 percent of our farm exports are 'donations to relieve distress among friendly peoples' through the 300 million dollar Food-for-Peace program. Of the remaining 94 percent, about 24 percent are sold for foreign currencies and 70 percent are private sales for dollars."

• • •

When signing the Agricultural Act of 1961, **President Kennedy** said, "The Agricultural Act of 1961 is a major step toward a sound agricultural economy and a better life for the farmers of this country. It is designed to improve farm income, expand the markets for agricultural products, reduce our stocks of grains and wheat, and relieve our taxpayers of carrying some of the cost of carrying these stocks. I believe these objectives are in the best interests of our farmers and our country."

• • •

While recently pointing out that the average investment per farm in this country has jumped from $16,979 in 1950 to $34,648 in 1960, **R. B. Tootell,** Governor, Farm Credit Administration, said farmers are using more credit to fill some of this "capital gap"

He also said, "Despite the trend toward larger, 'commercial' farms, the farm family will remain as important as ever to American agriculture because the farm family continues to perform the major part of the work on these farms"

• • •

L. M. Osborne, Vice President of A. O Smith, spoke on "Animal Agriculture and the Farmstead Mechanization Business" at the recent National Institute of American Agriculture. During his talk he pointed out that "Specialization and mechanization in production of livestock is a trend *seemingly* great but still very, very much in its infancy. We have migration of workers away from the farms. That trend is here to stay and we can't change it. We have increasing sizes of farms. We have increasing taxes. These all mean that the farmer who is left to do the job must do that job with fewer people and perhaps with more acres. There is only one answer—through farmstead mechanization, through better use of his capital and through better use of his brain power, in order to accomplish the job."

• • •

In a speech before the Newspaper Food Editors Conference, **Dr. Robert H. White-Stevens** said, "Actually, our surpluses are not so huge as one would think—our basket of plenty not so inexhaustible as it might appear. Take one basic commodity such as grain, examine the surplus statistics carefully, and you realize that our production is only about 4 percent above consumption. The cost to the nation of supporting such a surplus is indeed small compared to the financial repercussions that would follow a scarcity."

• • •

Secretary Freeman reiterated the 1952 statement of policy of the USDA. He promised that "the USDA will encourage the growth of cooperatives through which farmers can work together to produce and market their products to greater advantage and supply themselves with goods and services more effectively and economically than otherwise available."

• • •

"Agriculture is a growth industry, not a dying one," **M. K. Mathews,** deputy director of Land Bank Service for the Farm Credit Administration, Washington, D. C., recently told stockholders of the Federal Land Bank of New Orleans. "Based on population increases alone," Mathews said, "demand for farm-produced food and fibre will increase as much as 40 percent by 1970 for some products and it will be up to farmers — working individually and through their cooperatives — to gain their fair share of the growing market."

FARM TRENDS

A quick summary of developments in agriculture

THE FEED GRAIN PROGRAM is substantially the same as that of 1961. An additional provision: Barley growers are now eligible for payments if they set aside acreages to an approved conservation use and do not increase corn and sorghum grain acreages above the 1959-60 average. Special exemption is given to producers of malting barley.

SOYBEANS—INDICATIONS ON August 1 pointed to a record soybean crop in 1961 of 683 million bushels, up 124 million from the previous year. Crushings and exports are also likely to set records during 1961-62 taking a good part of the expected increase provided by the 1961 crop, but still leaving end-of-year carryover (September 30, 1962) up sharply from the 5 million bushels of the year before.

TOTAL FEED CONCENTRATE SUPPLY in 1961-62 is expected to be about 246 million tons, 5 percent less than 1960-61 and the first dip in supplies since 1952. Prospects also are for total feed grain use to exceed production resulting in some withdrawal of grain from this year's record carryover of 85 million tons. The brighter outlook for feed grains is largely due to reduced corn and sorghum acreages through farmers' participation in the 1961 feed grain program.

CASH RECEIPTS TO FARMERS from sale of milk and farm separated cream in January-July 1961 ran about 3 to 4 percent ahead of a year ago. About half of the increase was due to higher milk prices; the rest, primarily to larger milk production and farmers shift to selling whole milk.

WHEAT SUPPLIES in 1961-62 of 2,619 million bushels are second only to record 2,672 million bushels year earlier. Exports are expected to total all-time record of 675 million bushels and domestic disappearance about 594 million.

FARM BUSINESS CONDITIONS

Parity ratio down

Marketings up

Farm deposits down

ITEMS	July 1961	June 1961	July 1960
PRICES:			
Received by farmers (1947-49 = 100)	82	86	87
Paid by farmers (1947-49 = 100)	120	120	119
Parity price ratio (1910-14 = 100)	68	72	73
Wholesale, all commodities (1947-49 = 100)	110	110	110
Paid by consumers (1947-49 = 100)	128	128	127
LABOR:			
Farm labor, U. S. (incl. per month without board)	82.25	—	87.50
Factory labor, U. S. (incl. earned per week)	94.00	94.24	91.14
PRODUCTION:			
Industrial, physical volume (1947-49 = 100)	171	168	166
Farm marketings, physical volume (1947-49 = 100)	127	139	128
INCOME PAYMENTS:			
Total personal income, U.S. (annual rate, bil. of dol.)	422	417	405
Cash farm income, U.S. [1](annual rate, bil. of dol.)	—	37	36
EMPLOYMENT:			
Farm (millions)	6.5	6.7	6.9
Nonagricultural (millions)	62.0	62.0	61.3
FINANCIAL (District member banks):			
Demand deposits:			
Agricultural banks (1955 monthly avg. = 100)	99.0	99.5	97.8
Nonagricultural banks (1955 monthly avg. = 100)	103.7	102.2	103.7
Time deposits:			
Agricultural banks (1955 monthly avg. = 100)	143.7	142.8	134.0
Nonagricultural banks (1955 monthly avg. = 100)	147.2	146.1	138.7

[1]Based on estimated monthly income

Compiled by the Research Department, Federal Reserve Bank of Chicago

WITH HOG SLAUGHTER this fall coming from the 7 percent larger pig crop than a year earlier, prices are likely to average below last fall's levels. The current drought could be an important factor in the cattle outlook for the rest of 1961. Cattle slaughter will probably only be up slightly from a year earlier unless supplies increase from the drought areas. If this occurs, prices of both fed and grass cattle may become depressed.

CORN FOR GRAIN PRODUCTION in 1961 would have reached a record 4 billion bushels under a program of "no controls", Secretary Freeman recently stated. Instead, the 1961 crop under the new feed grain program is expected to be about 650 million bushels lower than the "no control" estimate, and some 540 million bushels under the 1960 production figure. The August crop report indicates the program will reduce existing CCC stocks by an estimated 250 million bushels.

THE INDEX OF PRICES received by farmers rose nearly 2 percent during the month ended August 15. Higher prices for beef, cattle, milk, hogs, cotton, and wheat accounted for most of the increase. Farmers received sharply lower prices for most commercial vegetables and for potatoes. A sharp advance in feeder livestock prices raised the Index of Prices Paid by Farmers, including interest, taxes, and farm rates one-third of 1 percent. The mid-August Index was 1 percent higher than a year earlier, and the highest of record for the month.

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BROWER Kleen-Feed CATTLE FEEDER

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- Trough Design Saves Feed
- Feed in Trough Always Fresh
- Improved Palatability Increases Intake for Faster Gains

Save over 100 hours of labor a year with this practical, efficient self-feeder — cut down your feed bill, too! Specially designed trough keeps a constant but small amount of feed before cattle. All but eliminates waste . . . keeps feed fresh, clean and palatable. Cattle eat more; make faster, more profitable gains. Feed is available around the clock. Even timid animals have their chance at fresh feed. Built of heavy rust-resisting steel for 15 to 20 years of service. TWO SIZES — 15 ft. feeder holds 250 bushels; feeds 100 cattle for a week on one filling. 7½ ft. feeder, 125 bushel capacity, does it for 50 head.

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- Two Sizes — Double Stall for 40 Calves . . . Single Stall for 20 Calves

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UPGRADE your calves for extra profits with Brower's Calf Creep Feeder. Get heavier weight and better finish at weaning — off to market earlier at big feed savings. Weather-tight — keeps feed dry. Anchors solidly at all 4 corners. Sturdy angle iron stalls keep out larger cattle; fold for towing through gates. Steel skids; hopper and trough of heavy rust-resisting Armco Zincgrip. WRITE for literature, prices.

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Town_____ State_____

New Ideas you can use

The booklets featured on this page present many new ideas. To obtain them, send a post card to the listed address, and be sure to include your return address. Say you saw it in Better Farming Methods.

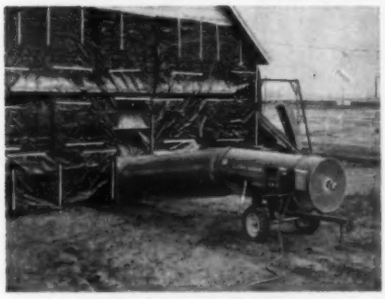
New Rotary Cutter

A new 84-inch rotary cutter is sized for big jobs with its seven-foot wide cut. The new cutter speedily and economically mows pastures and lawns, clears the weeds from orchards right up to the trees, cuts heavy brush, mows road shoulders, and performs a host of other tasks for farmers and contractors, according to L. E. Dearborn, general sales manager, Tractor and Implement Division, Ford Motor Company Birmingham, Michigan.

Feeding Dehydrated Alfalfa

"How to Feed Modern Dehydrated Alfalfa" is the title of a 28-page booklet published by the American Dehydrators Association, Department BFM, Board of Trade Building, Kansas City, Missouri. Send for your free copy.

Portable Crop Dryer



A new portable crop dryer which can be adjusted quickly to handle efficiently a wide range of drying jobs, has been developed by John Deere engineers. The new dryer, the John Deere 98, provides an air-delivery range of 5,000 to 22,000 cubic feet per minute. The rate is adjusted by changing the pitch of the fan blades. Deere & Company, BFM Department, 3300 River Drive, Moline, Illinois.

Guide to Better Beef

This booklet has been designed as a guide to better beef, better nutrition, better health, and better profits. The 8 x 8 inch booklet is fully illustrated throughout its 18 pages. Sections of the book describe methods of building a ration, with a full report that "low-roughage, high-energy rations set the pace;" why low-roughage rations are popular today in progressive feedlots. Beef cattle nutritional needs are listed, and charts portray the primary additives, recommended or suggested use levels, and the advantage of each. Copies will be available through Merck Chemical Division, BFM Department, Agricultural Products, Rahway, New Jersey.

Farm Fencing Circular

Send for your copy of a circular that describes fence construction that will increase efficiency for your beef cattle feed lots, dairy cattle yards, holding pens and other farm fencing needs. American Steel & Wire, BFM Department, Rockefeller Building, Cleveland 13, Ohio.

Cut Evaporation Loss

Booklet describes Aqualoc NX, the protective monofilm water saver that cuts evaporation loss from stock ponds, lake or storage reservoir. Aqualoc NX is a micronized powder that is harmless to livestock, fish, birds, plants and humans. Send for your free copy to M. Michel and Company, Inc., BFM Department, 90 Broad Street, New York 4, New York.

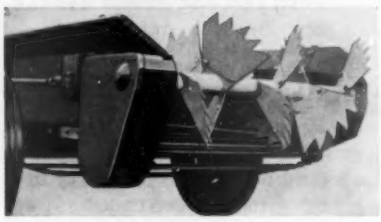
Automated Feed Plant

"This is Automation" is the title of a booklet describing the Davis Automated Feed Plants. Booklet tells about the various types of equipment manufactured for construction of farm feed plants. Write for free copy to H. C. Davis Sons Manufacturing Co., Inc., BFM Department, Bonner Springs, Kansas.

"Sulphur In Plants and Soils"

This is the title of a booklet that beautifully tells the story of sulphur and its importance in plants and soils. The booklet is well documented with an extensive bibliography. The Texas Gulf Sulphur Company will send you your file copy if you write to BFM Department, 75 East 45th Street, New York 17, New York.

Cold Weather Spreader



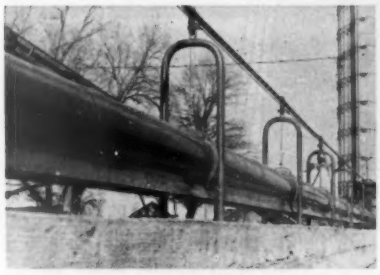
A single beater manure spreader designed especially for cold weather use is New Holland's new entry in the 130-bushel capacity class. A dozen sawtooth paddles of high-strength Man-Ten steel are built to rip through frozen or packed manure. New Holland Machine Company, BFM Department, New Holland, Pennsylvania.

Low-Cost Grain Storage Structure

A new, low-cost, glass-lined Harvestore grain storage unit that stores and feeds high moisture corn, or stores dry shelled corn, has been announced by A. O. Smith Harvestore Products, Inc., Kankakee, Illinois. Incorporating all the quality and exclusive features of the larger-sized Harvestore structure, it also provides low-cost per bushel storage of dry shelled corn, or by adding either a standard grain auger bottom unloader

or a new sweep arm auger bottom unloader it can be used for storing, processing and feeding high moisture grain to beef cattle, dairy cattle and hogs. The combination of "oxygen-free" sealed storage and bottom unloading permits fill-in and feed-out at any time.

Feed Handling Machine



A "GREEN CHOPPED" Feeder that will handle all types of green chopped feed, haylage, silage, and ground feeds. This unique tube-type feeder is available in two sizes; 10-inch diameter enclosed tube and 12-inch enclosed steel tube housing. Feed is shredded in the feed hopper and conveyed along the feed tube and deposited into the feed bunk at the required depth. The entire hopper and tube assembly is raised and lowered by a mechanical device (optional hydraulic). Tube rotates to feed a divided bunk. All that is needed is a stationary divider board in the center of the bunk. Scottdel, Inc., BFM Department, Swanton, Ohio.

Foam Cushioned Tractor Seat

Aware that the farmer often spends more than 12 hours per day on his tractor during the planting season, the Bostrom Corporation has developed a foam cushioned tractor seat capable of withstanding hard wear and the worst the elements have to offer. The seat is adjustable through a front control for angularity and it can be tipped up to prevent snow and water from accumulating. The driver "sits" on the seat but "rides" on Bostrom's special torsional suspension system which protects him from fatiguing and physically damaging vibrations, jolts, and jars. The system consists of cylindrical rubber springs attached to spring shafts or lever arms which act as "knees" taking up jolts before they reach the driver. Photo courtesy of Bostrom Corporation. BFM Dept., 133 West Oregon Street, Milwaukee, Wisconsin.

Bedder for High Rainfall Farmer

Specially designed for bedding or rebedding flat, contoured, or contour-terraced land, Massey-Ferguson's new M-F 64 Bedder gives the high-rainfall area farmer a new tool for combating erosion and reducing seed damage. The bedder unit can be easily converted to a four-row cultivator by removing the bedder beams and attaching the cultivator gangs.

Speed Grinding of Ear Corn

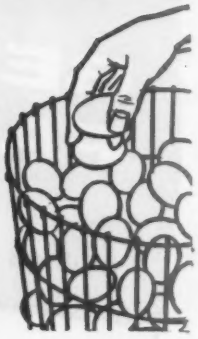
A new crusher-feeder head to speed grinding of ear corn and hay is now available with the Gehl Mix-All Feedmaker manufactured by Gehl Bros. Mfg. Co., West Bend, Wisconsin. The four-speed swinging auger feeder and the 17-inch-wide crusher make fast work of grinding ear corn.

New Folding Farrowing Stall

A folding stall recently announced by Clay Equipment Corporation offers many heavy-duty features such as one-half inch carbon steel rod spindles in the side panels, and a durable, easy-to-clean electro-galvanized finish. Complete details are available by writing to Clay Equipment Corporation, BFM Department, 500 River Drive, Cedar Falls, Iowa.

PILOT BRAND OYSTER SHELL

Helps Put More Eggs in Your Basket



No question about it. PILOT BRAND Oyster Shell helps you get the most eggs with the strongest shells—helps you make more money with your flock. PILOT BRAND is economical, too. Costs about a nickel a year per hen. Always keep PILOT BRAND in the hoppers. It's the ideal eggshell material.

PILOT BRAND OYSTER SHELL

In the bag with the big blue Pilot Wheel—at most good feed dealers.

For Poultry

Oyster Shell Products Company
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How to Use Credit
Page 8

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agribusiness RESEARCH REPORT

A special report for leaders in our food and fiber industry. Complete publications available from noted source.

by R. L. Kohls, Purdue University

Recent History of Food and Marketing Costs

How important are labor costs in food marketing? How much profit have food marketing firms been making? What are causing rising food costs and prices when farm prices are declining? These questions and many others are answered in the short, illustrated and readable pamphlet, **Food Costs** (*Miscellaneous Publication* 856, *USDA, Washington* 25, *D.C.*)

Some Facts About Migratory Farm Workers

With national TV coverage, the migratory farm worker situation has become of national interest. Some of the facts about this important group in agricultural business are presented in **Migratory Farm Workers in the Midcontinent Streams,** (*Production Research Report* 41, *USDA, Washington* 25 *D.C.*). Details about the income, movement, educational problems and working conditions of these groups are given.

How Large Is the World Shortage of Food?

When measured against desirable nutritional standards, the world food shortage in 1962 is equivalent to 35 percent of U.S. milk production plus 40 percent of U.S. dry bean and pea production plus 120 percent of U.S. annual wheat production. This is the conclusion of the report, **The World Food Deficit,** (*Foreign Agricultural Service, USDA, Washington* 25, *D.C.*). Also in the study are the details of the current diets of the various countries of the world—a good antidote for the heavy doses of writings about U.S. surplus problems.

Retail Food Developments

Now, probably to a greater extent than anytime in the past, changes in marketing which really effect farmers directly are occurring. Many of these changes trace at least part of their cause to the revolution underway in the grocery business. The bulletin, **Changes in Food Retailing,** (*Washington Agricultural Experiment Station Bulletin* 619, *Pullman, Washington*), discusses these retailing changes and speculates on their causes and effects. This study covers an area in which those involved in agribusiness must be well informed.

Who Listens to Whom?

With so many new farm developments and so many firms interested in selling them, increasing interest has developed in how farmers receive and accept new ideas, products and practices. The study, **Muck Vegetable Growers: Diffusion of Innovations Among Specialized Farmers,** (*Ohio Agricultural Experiment Station Research Circular* 94, *Wooster, Ohio*), analyzes this acceptance procedure among a group of highly specialized farmers.

History of A State Milk Control Law

"For nearly 25 years, state milk market controls were able to maintain producer prices at higher levels than probable under alternate schemes or open market conditions." This statement is made by the authors of **State Control of the Rhode Island Milk Market,** (*Rhode Island Experiment Station Bulletin* 345, *Kingston, R.I.*). Here is a detailed analysis of the mechanics used and results obtained under state regulatory operations. This study is of particular interest now with so many state legislatures debating milk regulatory issues.

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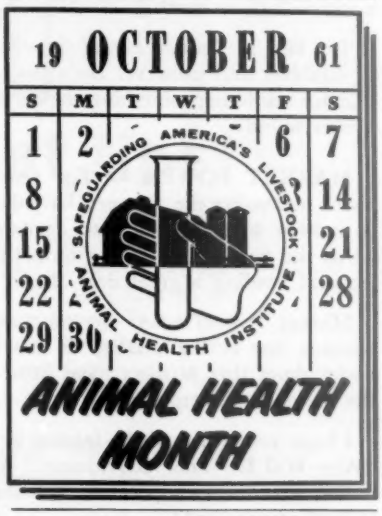

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EDITORIAL

John W. Hough

FAMILY FARMS — Several days ago we were visiting with an agricultural economist who asked the question, "Are all family farms desirable?" He didn't ask if the family farm was desirable, but if all family farms were desirable. Is every family farm desirable from the standpoint of providing a good income and and home for the family, a pleasant environment and the proper advantages for the children?

When we read or hear someone pleading for the survival of the family farm we wonder if he really means what he says. When a Congressman proposes new agriculture legislation and votes for it, does he ever realize that he may be protecting and perpetuating many undesirable family farms? Isn't this what much of our past and present legislation has tended to do?

Family farm and home are very romantic words for all of us. They conjure up many wonderful memories and experiences, but for many people they can also mean a "hell on earth."

The **best** in "family farms" is what we are fighting to establish and preserve. Let's stop kidding ourselves that we are losing something that is not as idealistic as it may sound.

MARKET POWER — For years you have read about increasing the farmer's bargaining power. There is another term coming into agribusiness that means much the same thing. It is a term that you'll be hearing and reading a great deal about.

Market Power means the amount of leadership a business has in the market. It has been pointed out many times that farmers have little market power in the nation's marketplace.

I hope you will read the feature in this issue entitled "Who Will Do Your Bargaining?" Will it be a labor union, a farmers cooperative, private industry, or the federal government?

Personally, I don't think agriculture's market power will be represented by unions or the federal government. Instead, it must come from farmer-owned cooperatives and incorporated business. The organization that will provide market power for farmers must represent the best in commercial agriculture. It will come from farmers like yourself who produce in quantity and top-quality commodities.

Future achievement of real market power for the nation's farmer will mean even greater changes and adjustments than we have yet seen.

VACATIONS — Did you get a family vacation this summer? During August we spent a week at a lake in Wisconsin. Three of the neighboring cottages were occupied by farmers and their families. Two of the farmers were dairymen. These people had a wonderful time for every minute of their vacation was fun. We learned that these families really worked to get this free time. One farmer told me that it was a must for the children and wife because all their urban friends took vacations. I think he also thought it a must for he said it was surprising to see how good everything at home looked after the few days away.

The major problem in the way of vacations for farmers is labor and this is especially true for dairymen. We'd be interested in hearing of ways our readers have worked out this problem.

It has been suggested that a two-family farm would help give some vacation time to each family as well as solve other labor problems.

How about a "farmers' vacation service" where someone contracts out the whole year for weekly periods. He would come on the farm at a scheduled date and do all the work while the farmer was enjoying a well-deserved rest. In a prosperous farming community this could be an excellent farm service with a good income.

NOT A UNITY WITH COMMON OBJECTIVES —We have just returned from the Annual Meeting of the National Association of County Agricultural Agents in New York City. One of the outstanding talks we heard was by Dr. Herrell DeGraff of Cornell University. His title was "Notes on Marketing in Transition". While discussing the costs of marketing that reduce the farmer's share of the consumer's dollar, Dr. DeGraff said, "If the more costly services would contribute to the competitive success of such a product in the market, the producer might be better off with the smaller percentage of the retail dollar.

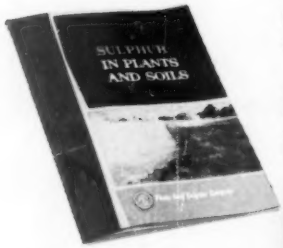
"This problem comes sharply into focus when we recognize—as we must recognize—that all of agriculture is not a unity with common objectives. More and more our farmers have become sub-groups of specialized producers, each of which wants to sell its product in competition with alternatives. For example, large numbers of cattlemen are completely specialized. They have a single market objective. It is to sell beef. They want the services performed on beef that will successfully attract the consumer. They could not possibly be less interested in doing something to enhance the consumer appeal of pork or poultry—and this illustration suffices for endless others of similar nature."

...right to its leaf tips!

The photograph shows several leaves of a red bean plant growing in soil to which radioactive sulphur (S-35) had been added. Note how the sulphur originally implanted in the seed traveled well up and into the vein pattern of the leaves themselves. It will do this only when the seed sulphur is replaced by sulphur from the soil.

Quite evidently the red bean plant wants sulphur. Other plants in varying degrees react in a similar way, indicating that many plants do hunger for sulphur as a nutrient and without it do not crop well. Is it wise, then, to ignore or even downgrade the need for sulphur in plants?

A concise, illustrated discussion of this subject as it applies to many plants is available in our new brochure "Sulphur in Plants and Soils." Would you like to have copies for yourself and associates?



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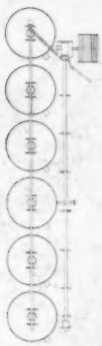
THE SYSTEMS APPROACH

Some pages come to life from the BS&B Harvest Control Booklet

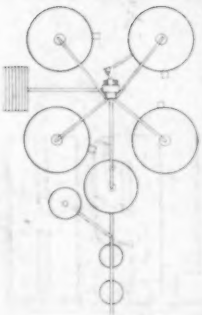
PLAN A: The In-Line System

RUSH BROTHERS FARM, Severance, Kansas . . . . 115,000 Bushel capacity completely automated storage system. Their BS&B Harvest Control Unit includes such time and labor saving devices as: dump hoist, steel grain pit, 3,000 bu. cap. leg, 10 bu. automatic dump scales, truck weight scales and batch dryer. What's more, it's built to be expanded any time the Rush Brothers decide to do so. Another BS&B systems-engineered Harvest Control Installation.



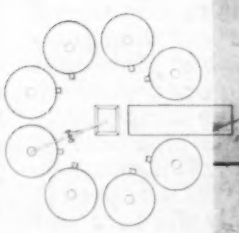
PLAN B: The Cluster System

EWING FARMS, Vincennes, Indiana .... basically a feedlot operation, Bub Holscher dried his 14,000 bushel harvest, stored it and feeds up to 140 head of cattle in about 15 minutes. This totally mechanized installation was system-engineered jointly by the BS&B dealer, the Indiana Public Service Co., and Black, Sivalls and Bryson.



PLAN C: The Radial System

EARL HALLAM FARM, of Walker, Missouri, demonstrates how the systems approach can be developed out of existing storage facilities. With the six BS&B bins Mr. Hallam added and a BS&B Batch Dryer, the system can be used either to feed or to market his grain, depending on market conditions.



BS&B GRAIN BINS AUTHORIZED DEALER

It all adds up to one thing. Mechanization is and will become a more important part of modern farming. We believe that the storage element is a vital part of any system, and to assist you BS&B has set up its AgriSystems Committee. If you are considering mechanization today or in the future look for the man displaying this sign, or write:

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